This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Gov
3158
91 A

Gov 3158.91 Bd. July, 1891.
A

Harvard College Library

FROM

Toronto University.

24 Apr. 1891.

TORONTO UNIVERSITY STUDIES

IN

POLITICAL SCIENCE

W. J. ASHLEY, Editor.

cover

VI . 6126

FIRST SERIES. No. II

MUNICIPAL MONOPOLIES

AND THEIR MANAGEMENT

BY

A. H. SINCLAIR, B.A.,

University College, Toronto.

TORONTO:

PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST.

1891.

TORONTO-UNIVERSITY STUDIES

IN

POLITICAL SCIENCE

W. J. ASHLEY, Editor.

Harv Coll 10

FIRST SERIES. No. II.

MUNICIPAL MONOPOLIES

AND THEIR MANAGEMENT

BY

A. H. SINCLAIR, B.A.,

University College, Toronto.

TORONTO:

PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.

1891.

~~VI. 6126~~
Gov 3158.91
A
HARVARD COLLEGE
APR 21 1921
LIBRARY.
The University

Copies of this Essay may be obtained on application to the Education Department for Ontario, Toronto.

TABLE OF CONTENTS.

PAGE.

Preface 5

MUNICIPAL MONOPOLIES AND THEIR MANAGEMENT—

Chapter I.—*Municipal Monopolies* 7

Section I.—On Certain Requisites of Modern City Life 7

1. Waterworks 7

2. Street-cars 8

3. Lighting 10

II.—Their Relation to Government 11

III.—The Monopolistic Character of the Several Industries 15

1. Street Railways 15

2. Waterworks 16

3. Gas Supply 17

4. Electric Lighting 18

Chapter II.—*Comparison of Public and Private Management of Municipal Monopolies.* 20

Section I.—Some Abstract Financial and Economic Considerations 21

II.—Relative Efficiency of Public and Private Servants 24

III.—Some Comparative Statistics 27

1. Waterworks 27

2. Gas Supply 29

3. Electric Lighting 34

4. Street-cars 35

IV.—Some Conclusions 36

Bibliography 37

PREFACE.

The due relation between civic Government and certain industries, which, while of first consequence to the inhabitants of cities, are yet necessarily monopolistic in their character, is a question of urgent importance. The present position of affairs in the chief city of Ontario has suggested to the Editor the desirability of devoting to the consideration of this topic the second of the Toronto University Studies in Political Science.

The earlier portion of Mr. Sinclair's Essay is occupied with a statement of the conditions affecting the industries in question, and a discussion of the various considerations which have to be taken into account in the determination of municipal policy. Herein he is, to a large extent, traversing ground already examined by others; and such usefulness as the Essay will possess will be derived from its comparative completeness and its systematic arrangement. The later part of the Essay, however, is, in my opinion, of higher value; for it is, as far as I know, the first impartial attempt that has yet been made to compare the financial position of public with that of private undertakings. This comparison ought to do somewhat to moderate the ardour of extremists on either side.

Into the detail of Mr. Sinclair's argument it is not desirable to enter in this note. But there are two aspects of the subject which he has not touched, and upon which some observations may not be out of place.

An enlargement of municipal action in relation to monopolistic industries has been very widely supported, especially in the United States, in the belief, which has been freely expressed, that it would be a step in the direction of Socialism, or "Nationalism." Such advocacy can scarcely be regarded as altogether wise. In the first place, it implies that we can formulate a much more definite conception of the future organization of society than is permitted by an intelligent belief in social evolution. In the second place, it arouses the opposition of men who would otherwise be ready to assist in a practical reform; and allows those who are struggling to retain in their own hands the advantages of monopoly to shelter themselves behind the principle of industrial freedom. It would be at once more scientific and more expedient, if the advocates of municipal action would allow that, as the world is now constituted, individual enterprise has obvious advantages, and then go on to point out that in the case of certain city industries these advantages cannot be obtained, since, from the nature of the case, competition is there impossible. What the common sense citizen has to understand is this, that to try to maintain individual enterprise in a field where it cannot be allowed with advantage, is to discredit individual enterprise even in fields where it is desirable.

The other aspect of the subject to which Mr. Sinclair has not adverted, is its relation to the labour employed. The desire to secure improved conditions for labour is the chief motive for the English agitation for municipalization, for instance in the case of the London docks and tramways. In America this consideration is seldom heard of; and it is the financial advantage to the city that is put in the foreground. But it is evident that this is a question which will force itself upon public attention, even if it is not raised by philanthropy. Where large bodies of comparatively unskilled labourers are employed, there is always especial danger of labour disputes; as is sufficiently evidenced by the street car strikes in New York, Vienna, Toronto, and indeed in most great cities. But labour disputes involving a cessation in the supply of water or gas or street car service more immediately affect public safety and convenience than any other similar difficulties, and call more loudly for a remedy. It is difficult to believe that the present anarchy can long continue. In the interest of the users of the service, if not in that of the labourers, some method of public regulation must, sooner or later, be arrived at. But whether direct municipal management would be an immediate and satisfactory way out of the difficulty may well be doubted. The solution of the problem must depend on the circumstances of each place. In the present condition of municipal politics in most American cities, to add greatly to the number of voters in the pay of the corporation would certainly be dangerous.

W. J. A.

MUNICIPAL MONOPOLIES AND THEIR MANAGEMENT

CHAPTER I.—MUNICIPAL MONOPOLIES.

Section 1.—On Certain Requisites of Modern City Life.

This is an age of great cities. They have swept over their old boundaries; and adjacent towns and even counties have been absorbed. In the United States a hundred years ago, there were only 13 cities numbering more than 5,000 inhabitants; not one had more than 40,000; and of the total population of the country only 3½ per cent. lived in cities of more than 8,000. In 1880 there were 494 cities of more than 5,000. In 1890 there are 74 of more than 40,000; 28 of more than 100,000; and nine times as large a percentage (29.11) of the total population live in cities of more than 8,000 inhabitants.

This tendency to aggregation has not been confined to new countries.* The capitals of Great Britain, France, Germany and Austria have each increased in population fivefold since 1800, and their example has been followed by the provincial cities. In England and Wales, during the ten years 1871-81, the population of city districts increased 19.63 per cent., while that of country districts increased only 7.36 per cent.

With this rapid growth of cities, which forms so striking a characteristic of the present century, new and unforeseen difficulties have sprung into existence. Old forms of civic government, on being subjected to the severer strain, have not stood it well. They seem to have been out-grown, as the circle of their influence widened; and, in the face of new conditions, all the great municipalities of the world are striving to solve the tremendous problems they find confronting them.

What are some of the necessities of modern city life, that give rise to these problems?

Accompanying the increasing importance of cities, partially the cause, but much more largely the result of that development, is the attempt to protect their inhabitants from the manifest evils shewn in some of the existing cities of the Old World to be the result of crowding a large population into a small area. The latest discoveries of physical science have been called into service; and it has been found that *cleanliness* is a necessary precaution against the epidemics that attend the filth and squalor of Eastern plague-swept cities. Of the good that can be accomplished in this direction an excellent example is presented in the case of Liverpool, which "comprises an area of 5,210 acres, with an estimated population of 599,738, or 115 people per acre, being the most densely populated city in Great Britain. The total number of deaths during the year 1889 was 12,159, equal to 20.3 per 1,000—a reduction of 6.9 per 1,000 since 1880. The total number is 1,847 less than in 1887, and 2,000 below the average of the last ten years—notwithstanding the increase in population—which is attributed to the good sanitary work of the health committee."†

WATERWORKS.—For cleanliness an abundant supply of water is absolutely necessary. It would, no doubt, be possible in most cities to obtain sufficient water for this purpose from wells; but health demands that the water used should be of a purer quality

---

* A comparison between an old and a new country in this respect is interesting—

In Germany	-	28	per cent.	of the people	live	in cities of more than	5,000 inhabitants.
In the United States		26	"	"	"	"	4,000 "
But in " "		18	"	"	100 cities of more than		20,000 "
While in Germany	-	16	"	"	116	"	20,000 "

So that in the United States (as compared with Germany), the large cities have grown at the expense of the small.—Mayo Smith, *Statistics and Economics*, p. 31. (*Pub. Amer. Econ. Assoc.*, Vol. III.)

† Mr. Sherman in *United States Consular Reports*, June, 1890.

than can be obtained from the soil of cities, impregnated as it must be with the germs of disease. In order to be pure, the water supply must therefore be brought from beyond the reach of this contaminating influence. It must be brought from its source either in mains or by aqueduct, and distributed throughout the city by a system of pipes. Whatever method be adopted, it is evidently a matter involving a very great outlay of capital. This cost is greatly enhanced by the fact that in order to supply high buildings, and to give "a head" of water in case of fire, it is desirable to keep a much greater pressure of water in the mains than would otherwise be necessary. A far better and more costly piping is essential in order to stand the strain of this pressure; and the loss of water by leakages becomes important, since the amount of a fluid passing through an orifice in a given time varies directly with the force behind it. A system of water-works is thus a *necessity* for a city.

The growth in the number of water-works in the United States and in Canada is illustrated by the following table * shewing the number of works operating in the years mentioned:—

	1800.	1850.	1875.	1885.	1889.
United States.....	5	69	535	1,037	1,960
Canada.....	0	6	20	46	87

In Great Britain and Ireland in 1880, there were 120 companies operating with a capital of £7,000,000, (exclusive of 8 in London with a capital of £12,000,000), and a number of municipal plants in Glasgow, Birmingham, Manchester, etc.†

STREET CARS.—Another necessity arising from modern conditions of city life is some mode of cheap and speedy transportation from place to place within the city limits. Not only is this essential as a mode of communication between the business sections of a city, but, by enabling artizans to live farther from their work, it also acts as a safety valve to relieve the congested districts of population from the strain that would otherwise come upon them.

This strain is far too great already, but under existing conditions it must grow greater. In the new County of London there are 118 square miles, which have an *average* of 32,500 inhabitants to the square mile! In the more densely populated central sections, *e.g.*, Whitechapel, the number will of course be vastly greater. Apart from the duty of the community to relieve the misery and prevent the evils resulting from such segregation, its mere presence is a very real menace to the safety of the city. All great cities have somewhat similar districts: Paris, Berlin, Glasgow, Birmingham, New York, Chicago, have them; and it they are not quite as wretched or nearly so large as those of London, it is only because these cities have not reached in point of numbers the "bad eminence" she has attained. If the density of such sections could be reduced to one-half by doubling the area of a city, the greatest difficulty would be overcome; light and fresh air for children, and a certain degree of seclusion would then be possible. But this increased area involves living at a greater distance from the scene of one's daily employment. So that some mode of transportation is essential; and if it were only cheap enough, and speedy enough, it would meet the requirements of the case.

This need, so far as it has been met at all, is met in all European towns, by elaborate systems of omnibuses, which ply on the principal streets at regular intervals. A moderate rate is charged, usually varying according to the distance travelled. These omnibuses are the direct descendants of the old stage coach, and are better adapted to traffic on narrow and crowded streets, than the street railway systems which take their place in American cities. These last are a very modern institution indeed, the first street railway having been built about 1855. Their development seems, however, to have kept pace with that of municipalities; and there are now, as nearly as may be, 957 street railways on this continent, having 8,818 miles of track, and worth in the neighborhood of $150,000,000. ‡

* Compiled from tables in Mr. M. N. Baker's *American Waterworks Manual for 1889-90.* (*Engineering News Office*, New York.) † Sir T. H. Farrer, *State in Relation to Trade.* (*Eng. Citizen Series*). p. 93.

‡ *Electrical World*, Nov. 22nd, 1890. The writer has reduced the values given by the various companies about one-tenth.

These are divided as follows :—

589 roads, 5,718 miles of track, run by *horses*,
valued at $54,000,000 ; cost of running 5.7c. per mile, for each car.*

49 roads, 527 miles of track, run by *cable*,
valued at $44,000,000 ; cost of running 2.5c. per mile " "

246 roads. 2,024 miles of track, run by *electricity*,
valued at $44,000,000 ; cost of running 2 2c. per mile " "

43 roads, 554 miles of track, run by *steam*,
valued at $7,000,000 ; cost of running 5.0c. per mile " "

So that " horse " roads do more than half the traffic. This is to be expected from the circumstance under which street railways have developed. A " horse " road is the easiest and cheapest to build ; although it is said to cost more to " run " than the others. The objections to it are : 1st, Its *slowness* especially for suburban traffic, where all the others are greatly its superior in this respect. 2nd, It requires a large staff of unskilled employees. 3rd, Its stables must be in a central part, and usually constitute a nuisance ; while the excreta of so many additional animals contributes largely to the uncleanliness of the streets.

Electricity stands second, although it is so new an element in motive powers,† and has won its way to popularity in medium-sized towns. It is in a transitional state, improvements being continually made in it ; so that a plant that may be very good to-day may be quite ancient in a year. The larger cities recognise this, and have been cautious in investing large sums in the enterprise. It is however becoming more stable every year, and more important roads are adopting it. The largest electric railway is in Boston, where the " West End System," with 284 miles of track, has 60 miles of it electrically equipped.

There are two kinds‡ of electric street car : one in which the power is carried in the car, which is called the " storage battery " system ; and another which obtains its power from a wire overhead, connected with the car by a trolley or arm fastened to the car, and having on its upper end a pulley which runs on the wire, thus completing the circuit. The advocates of the two systems wage enthusiastic war upon each other. The latter seems so far to be rather the more successful ; notwithstanding the disadvantage it labors under, of being obliged to string its wires upon poles which makes it necessary that the track should be by the side of the road, and in case of double tracks, one on each side of the road ; or else that the poles should be placed in the roadway in the space between the tracks. In either case the obstruction to traffic is considerable.

Both systems have the following disadvantages : 1st, They are affected by electrical changes in the atmosphere. 2nd, They are often damaged by lightning. 3rd, The track must be kept perfectly clear of snow in winter. 4th, The cogs are often stripped from the gearing in connection with the dynamo, leaving the car helpless on the street.§ 5th, They are unable to ascend very heavy grades. Their limit in this last direction would seem to be ascertained by the following examples :—Milwaukee has an electric railway working successfully over a 10 per cent. grade. Lynn (Mass.) has a system whose cars succeed in climbing a grade of 13.2 per cent. In Tacoma an electric railway was started ; but it was found unable to master a rise of 1 in 7, and it has been replaced by a cable line.

* For comparison with this may be noticed the following estimate of cost of construction of a ten mile road with fifteen cars, as given by a committee of the Am. Street Railway Association in Sept., 1890 :— Cable system—Cost of cable construction, $700,000 ; cars, $15,000 ; power plant, $120,000 ; total, $840,000. Electric overhead wire system—Cost of roadbed, $70,000 ; wiring, $30,000 ; cars, $60,000 ; power plant, $30,000 ; total, $190,000. Storage battery system—Cost of roadbed, $70,000 ; cars, $75,000 ; power plant, $30,000 ; total, $175,000.

† The first electrical street railway began running in Cleveland, O., in 1884.

‡ A third variety, where the wire is in a conduit beneath the track, has been tried in Boston and in Denver, but at such cost as to be out of the count.

§ " From five minutes to three years," was the reply of an electrical expert to a question as to the life of these gearings.

Electric systems have great advantages however :—

1st. They secure speed (from 3 to 20 miles per hour being obtainable at the will of the conductor)—a great consideration, especially in suburban districts.

2nd. In case of danger, electric cars can stop more quickly (owing to the dynamo being reversible) than either horse or cable cars.

3rd. They are cheap,* and, with the rapid improvements made in electrical science will probably soon become cheaper still.

The cable system, though cheap to operate. is very costly to establish; and is adopted only where there is great traffic in large cities, or where there are steep inclines to surmount. The cars are propelled by an endless chain, running in a tunnel beneath the track, and connected with the car by a clutch which passes from the latter through a groove into the tunnel. The chain is kept in motion by a central engine. Should the clutch catch on an inequality of the chain, it sometimes becomes impossible for the conductor to release it. The car then runs amuck, till it smashes against some obstruction, or till the central station can be communicated with, and the chain stopped. This of course stops all the other cars on that line.

Steam as a motive power for street cars, is not popular for obvious reasons. It is used on the elevated railway of New York, and the underground railway of London. In the former case its noise and filth constitute a nuisance to the inhabitants of the districts traversed, and in the latter to the travellers themselves.

LIGHTING.—The lighting of public thoroughfares early recommended itself not merely as a convenience but also as a necessary precaution for the safety of the inhabitants and their property. "A gas light is as good as a policeman," is a common saying, and the state of affairs so graphically portrayed by Macaulay,† as existing in English cities of the 17th century would no longer be endurable. "When the evening closed in, the difficulty and danger of walking about London became serious indeed. Falls, bruises and broken bones were of constant occurrence. For, till the last year of the reign of Charles the Second, most of the streets were left in profound darkness. Thieves and robbers plied their trade with impunity; yet they were hardly so terrible to peaceable citizens as another class of ruffians. It was a favorite amusement of dissolute young gentlemen to swagger by night about the town, breaking windows, upsetting sedans, beating quiet men and offering rude caresses to pretty women. . . . The machinery for keeping the peace was utterly contemptible. . . . It ought to be noticed that in the last year of the reign of Charles the Second began a great change in the police of London, a change which has perhaps added as much to the happiness of the great body of the people as revolutions of much greater fame. An ingenious projector named Edward Heming obtained letters patent, conveying to him, for a term of years, the exclusive right of lighting up London. He undertook for a moderate consideration to place a light before every tenth door on moonless nights, from Michaelmas to Lady Day and from six to twelve of the clock. Those who now see the capital all the year, from dusk to dawn, blazing with a splendor compared with which the illuminations for La Hogue and Blenheim would have looked pale, may perhaps smile to think of Heming's lanterns which glimmered feebly before one house in ten during a small part of one night in three. But such was not the feeling of his contemporaries. His scheme was enthusiastically applauded and furiously attacked. . . . Many years after the date of Heming's patent there were extensive districts in which no lamp was seen."

Progress in lighting has kept pace with other improvements; ‡ and even Macaulay's London of fifty years ago "blazing with splendor" would probably appear but poorly

*This cheapness is largely the result of their speed. If a road can run its cars half as fast again as those of another, two-thirds the number of cars will suffice.

† *History of England*, vol. I., ch. 3.

‡In 1882, in Great Britain and Ireland there were £50,000,000 engaged in the business; in 1889 the capital had increased to £60,000,000.

lit as compared with the average city of to-day. The importance of thorough lighting is being more and more recognized. In Glasgow the municipal authorities compel the lighting of stairways in tenement houses, and pay part of the cost. They can afford to do so out of what is saved in the cost of preserving order. Oil is of course no longer used for street lighting. From the advantages gas offers in the way of convenience and safety over oil lamps, they are being rapidly displaced by it as an illuminant for private use as well, especially in manufactories or where large quantities may be used.

Apart from its lighting properties its applications are manifold. It has been found useful as a heating agent on either a large or a small scale ; in the former to drive steam engines, in the latter for domestic purposes. It is obvious that coal can be more cheaply handled in large quantities at gas-works than when distributed in small quantities throughout a city. Moreover in gas-works the by-products of the coal are almost all utilized, scarcely any waste occurring in the production of gas. In the burning of gas it is estimated that 80 per cent. of the heat-producing power may be utilized, while in coal stoves 10 to 20 per cent. is obtained and in a grate fire only 3 per cent.*

As a motive power gas would do away with that bane of great cities, the smoke nuisance, whose far-reaching results for evil upon the physical and moral constitution of citizens are being more fully appreciated.† If the price of gas could be reduced it would help in all the above-mentioned reforms. It would be much more largely used, and in consequence could be produced still more cheaply. It is also held by some that, if it could be obtained at a sufficiently low price, its utilization as a motive power to drive small gas engines would tend to do away with the concentration of industry at local centres rendered necessary by the introduction of the steam engine at the beginning of the century.‡

In lighting, as in street railway traffic, electricity is rapidly assuming a very important place. In America it is estimated that there are 300,000 arc, and 4,000,000 incandescent lamps in use, requiring the employment of 300.000 men, and the investment of 300 millions of dollars.§ It has thus become a great rival of gas as an illuminant. Their peculiarities seem, however, to map out different spheres of usefulness for each. The great brilliancy of the arc light fits it for places where an intense light is called for, or where it commands a long distance, *e. g.*, a ship, a light-house, or a leading city thoroughfare ; while gas, being more divisible, is therefore the cheaper alternative where only a small space requires lighting. So that for city streets a system combining electricity and gas is best ; using the latter for suburbs where very clear illumination is not so necessary, for courts or for wooded avenues, where several gas-lights at short intervals are much more efficacious than one arc lamp. As the electric light does not take oxygen from the air as gas does, and as it produces but little heat, it is especially adapted for public halls, underground railways, inner rooms of buildings, etc., where ventilation presents difficulties. The incandescent lamp, being entirely protected from the atmosphere, is available for many places, *e. g.*, mines, where gas cannot safely be introduced.

Section 2.—Their Relation to Government.

It will be observed that all these industries have developed their present importance since 1850. This period marks the triumph of the " laissez faire " theory of politics by which the duties of government are confined to the narrowest possible limits; individual freedom of action being considered all in all and competition the natural ruling factor in every industry.

*Prof. James, *The Relation of the Modern Municipality to the Gas Supply*, p. 11.

†An interesting adaptation of the heating power of a gas jet is shewn in the thorough ventilation obtained in an otherwise stagnant-aired room by keeping a jet burning in the ventilating flue.

‡It has not yet been obtained cheap enough, however; and whether this result would follow is perhaps also doubtful. The same claim is raised on behalf of electricity. Lord Salisbury, in a recent speech, said. " Electricity will scatter the present unhealthy aggregation of labor." The truth of this is questioned by the *Electrotechnischer Anzeiger* which holds that it will annihilate small industries. In any event it seems scarcely likely that when so many conditions vitally affecting industry have changed within 100 years, that the state of things then existing could be returned to by simply eliminating what was at that time the disturbing element, viz., the steam engine. Whether, under the new regime that would result, the working man would be better situated than at present remains to be proved.

§Mr. M. J. Francisco, in a paper read before the National Electric Light Association, Aug. 19, 1890.

The principle of laissez faire was itself a rebellion against an earlier system of minute and manifold regulation of private enterprise on the part of government. While it was not ill adapted for the age in which it had its rise, that system had lost its usefulness under changed conditions. Instead of being a protection to the weak, as it was intended to be, it had become a bar to their progress, an instrument for their oppression. The paternal theory of the state was still largely affecting English industry, when Adam Smith wrote his "Wealth of Nations." He opened the way for its overthrow; and, in view of the injustice arising from its practical working, it is not surprising that he should have gone to the opposite extreme in advocating individualism. Self interest he held to be the great bond of society, and competition the natural, sole and universal regulator of every industry. His book was written in 1776; but it was not till the repeal of the Corn Laws that the principle he advocated attained its full triumph. Conditions had again changed in the interval, however; and some considerations which had been wholly overlooked by Smith had become matters of first-rate importance.

Only by slow degrees have men come to see that, under some circumstances, a let-alone policy may permit the strong to oppress the weak; and that a carefully considered interference by the authorities with the free action of the individual may be necessary for the moral and material welfare of the nation. "Competition we have learnt is neither good nor evil in itself; it is a force which has to be studied and controlled; it may be compared to a stream whose strength and direction have to be observed, that embankments may be thrown up within which it may do its work harmlessly and beneficially. But at the period we are considering it came to be believed in as a gospel, and, the idea of necessity being superadded, economic laws deduced from the assumption of universal unrestricted competition were converted into practical precepts, from which it was regarded as little short of immoral to depart." *

One of the first examples of legal interference becoming necessary was in connection with parents' control of their families. The Factory Laws have deprived parents of one means of support, viz., the earnings of their young children; and masters have, at the same time, had closed to them one source of cheap labor. While the employment of dearer adult labor has not resulted in the increased price prophesied for it, still the cost of some manufactured products has probably been enhanced. The change brought a certain amount of suffering as every change must do. Yet, weighing the evils against the benefits obtained, everyone must concede that it was better that the difficulties entailed by the change should be endured than that children should be allowed to grow up with the physical, mental and moral diseases invariably accompanying the older system.

But, in the revulsion from the restrictive policy that had so long stood in the way of real progress, the scale of opinion had naturally swung so far to the opposite extreme that it was not to be brought back to the balance by such an example of the benefits to be derived from occasional interference as the preceding. That was in behalf of children. *Men* were considered able to look after themselves. An example is seen in the conflict between labor and capital. When a laborer grumbled at having his wages reduced he was represented as being very unreasonable; for could he not stop work if he liked? Were there not others ready to take his place at the new wages, and should not competition and freedom of contract rule in all such matters? But the laborer saw that while there might be competition between himself and other laborers, there could be no freedom of contract between himself and his employer. He had a family depending on his earnings, to whom a day's loss of wages meant privation, and the time spent in looking for a new place starvation. His master could wait for months if necessary, but usually had a large number of applicants for the vacancy from whom to choose. The laborer was advised to submit patiently to his lot, which was natural and therefore right. To make the persuasion effectual, rigid laws against combinations of employees were enforced. Smarting with a sense of injustice, workmen combined in spite of the laws and were successful. In this period arose the resentment of employees against employer.

*Arnold Toynbee, *The Industrial Revolution*, p. 87.

The bitter antagonism lasted for a generation, laid the foundation of Socialism, and even now when the worst evils have been remedied may still be met with from time to time.

This struggle of capital and labor had an educative effect. It emphasized the fact that competition could be free only among *equals*. The idea that men could, by combining themselves together, produce something resembling this equality with their employers was a new one. It showed economists that they had been wrong in estimating the conditions of competition. The whole ground has been gone over again, and the conclusion drawn from the last twenty years' experience may be stated as follows:

While competition may be a very good and useful thing in itself, still it must very seldom occur that additional circumstances do not so enter into the consideration of any particular industry as to make absolutely free and equal competition in it an impossibility. Thus, turning to the question immediately before us, and asking how far a useful and effective competition between those engaging in the same business is really possible, it will be found that industries run through the gamut from those in which competition is by far the greatest factor to those at the other extreme whose naturally monopolistic features overshadow their competitive ones, in some instances destroying them almost entirely. At the latter end of the scale will be found those industries whose remarkable development and peculiar position as necessities of city life have been described in Section I., viz. Waterworks, Street railways, Gas and Electric Lighting and Telephone service.

They were not dealt with by Adam Smith because they were not in existence in his day. Among the first to touch upon their monopolistic characteristics was John Stuart Mill.*

But why should these industrial undertakings be monopolies? It is evident that their monopolistic character is not of the same kind as that of the artificial monopolies granted by Elizabeth, James I., and Charles I., in which an ordinary business was confined to stated persons by the crown authority, in return for annual payments to the treasury. Nor are they akin to those undertakings, such as inventions, or the establishing of new industries in a country requiring them, on whose behalf government may step in and restrain competition by granting patents, or by imposing a protective tariff. In fact they are diametrically opposed to the last mentioned in the particular that governments, whether general or local, have attempted to *create* competition in them, and in spite of the attempt they have become monopolies.

In what then do they differ so widely from other pursuits?

Some of their characteristics given by Sir T. H. Farrer in his book "The State in Relation to Trade" are as follows:

"1. What they supply is a necessary.

"2. They occupy peculiarly favored spots or lines of land.

"3. The article or convenience they supply is used at the place where and in connection with the plant or machinery by which it is supplied.

"4. This article or convenience can in general be largely if not indefinitely increased without proportionate increase in plant and capital.

"5. Certainty and harmonious arrangement, which can only be attained by unity, are paramount considerations."

No *one* of these peculiarities seems at all sufficient to constitute any of the industries under consideration a monopoly.

1. Their character as *necessaries* has already been dealt with in Section I.; but they are not more necessary to city life than, say a dry-goods store or a bakery, and these are industries clearly open to competition.

2. Here we meet a much more important difference between them and such a business as the sale of dry goods. By obtaining a good site for his store, *e.g.*, the corner of

* He notices them briefly in his *Political Economy*, book v., chap. xi., s. 11.

two leading thoroughfares, a merchant obtains an advantage over his rivals, but cannot shut them out.) But all the industries with which we are dealing occupy the *public streets themselves* for their business; so that competition is, of necessity, limited to a small number of companies by the physical impossibility of crowding an indefinite number of street car tracks, gas and water mains, electric light, telegraph and telephone wires upon one street, whether upon the surface, beneath, or above it. The number might be greater if the streets were wholly given up to them; but that is hardly what streets are for. Their use of the streets is a great inconvenience to the general public; and each additional track or main or pole increases the annoyance and obstruction in a far greater ratio than its proportion to those already "located" would at first sight lead us to expect.

While the people may be complacent under the breaking up of a street for two or three weeks in a season by the operation of laying or repairing the water mains of a company, and may be able to endure having the nuisance increased to twice that length of time by the incursion of a second company; still, if a third company appear on the scene with the same demand, it is evident that an increase of only 50 per cent. in the time during which the difficulty lasts will be viewed by the ordinary citizen as an increase of at least 100 per cent. in the annoyance. Is there not a point at which human patience must give way? With the appearance of a fourth company will not that point be reached, although the increase in time asked for be but one-third? The trouble is not in any way lessened by all the companies carrying on their repairs at once, for that would stop traffic on the street entirely. Granting all this, however, it does not prove an absolute monopoly of all the industries, for there is room on each street for at least two competing companies, with the exception of street cars; and these might be given adjacent parallel streets or allowed to use the one line in common as a means of access to important business sections, as is done in many American cities. So that the most that can be said for this second consideration of physical necessity, apart from other considerations, is that it limits competition to a comparatively small number.

3. Their third or *local* characteristic is also an important one in connection with some of these industries, If gas could be easily solidified or reduced to a small bulk, so as to admit, like cotton or sugar, of transportation to distant places, it would make all the difference in the way in which it could be supplied. Competition would at once be extended to all gas-producing companies within an area, great or small, according to the cost of freight on the article sent. The same is true of waterworks. If a street car ticket possessed the inherent property on being torn of conveying its holder to his destination all companies in the world could compete in supplying the tickets, though they should cost the companies as much as the present service does.

In the above cases of street car, water and gas supply, competition must be local in its character; since, from the nature of things, the plant supplying a town must be placed within the town or near it, so that business is restricted to *one* city on the part of any company. The local character of the supply, as a cause limiting competition, applies but in a slight degree to telephone companies, and to telegraph companies scarcely at all, since electricity, the form of force used in them, is so easily transferred over long distances.

4. By an industry of "increasing returns" we mean one in which if we invest $10,000 we may obtain a net return of $500 a year, but if we invest $20,000 we obtain a net return of *more* than $1,000, *i.e.*, by investing just twice the original amount we obtain *more* than twice the gain.

Now, those we are considering are typical industries of that kind, but they are not the only ones. In fact almost any business partakes of that nature up to a certain point, *e.g.* the large piano manufacturer usually has a great advantage over his rival who works on a small scale, from the fact that the former is enabled to buy materials in larger lots and so get reduced rates. He is enabled to employ specialists, etc. Still this, as we know, does not destroy competition among such manufacturers. One reason is that there comes a point beyond which, from the nature of the industry, the advantages of increasing the capital involved become less and less.

While in the case of street railways, gas, etc., this point may not be so quickly reached as in most others, it is finally found; and extension beyond that point can be carried on only at a loss. This fourth reason is not, then, sufficient in itself to constitute them monopolies.

5. As to the last reason given, viz., the great advantage of certainty and harmonious arrangement which can only be attained by unity, this advantage is especially marked in the case of the telephone, where its utility largely depends on being able to communicate with *any* of the services in the city. It is more easy to arrange a system of transfers between lines of street cars if they belong to one company. If there be a break in the water or gas mains or defect in telephone wires one company cannot cast the blame upon another, if there be but one company in a district. That company must at once shoulder the responsibility and attend to the defect.

But these are not the only industries where the same element of certainty is an advantage. As a matter of fact, a family seldom change their butcher or grocer, because they know what to expect of him; and yet these are callings not at all monopolistic in their character.

We have now examined the five conditions and find that no *one* of them is present in such a way as to constitute street car traffic, waterworks, gas or electric light, or telephone service a monopoly.

But if we consider these five conditions, *taken together*, the result is quite different. The first ensures a demand, the second narrows competition to two or three companies on a thoroughfare, the third confines competition to one town, the fourth makes the prize of obtaining a monopoly so great as to change competition into a war to the death, in which the weaker company must be "absorbed"; while the fifth makes it a matter of public convenience that there should not be competition in these industries.

Section 3.—The Monopolistic Character of the Several Industries.

1. *Street Railways.*—Since it is physically impossible to have more than one double track on a street, the only way in which competition becomes at all possible is

(1) To allow competing companies running powers over a common line of rails, or

(2) To let them use adjacent streets for their tracks.

Of the two methods the former is clearly the better; for in the latter case, the cost of laying and maintaining an extra track (from $1,200 to $90,000 per mile) * is so great that the company could afford to give better service, if the money wasted in building the second track could be saved and expended in that way. Moreovor, the impediment to traffic offered by street car lines, and the constant annoyance they present in residential quarters would be sufficient reason, apart from financial considerations, for confining them to the smallest number of streets possible.

So that, dismissing the case of competing on adjacent streets as wasteful and as a multiplication of an unnecessary annoyance, we have remaining the first named method, or that in which the same track is used in common by competing companies. This plan, with various modifications, is adopted in many American cities †; where it is usual for a number of companies to have running powers over common tracks in the "down town" or business sections of the city, and outside these to have their individual private tracks.

Now the chief considerations in a street car service are: (1) That it should take us to our destination with as little walking as possible; (2) That we should be able to get there as *quickly*, (3) as *comfortably*, and (4) as *cheaply* as possible.

Over that part of the road which is private property there can be no competition; for if roads are on alternate streets, the disadvantages in the way of wastefulness and annoyance dealt with above make themselves felt. If, on the contrary, they diverge to a

* *Toronto Street Railway Arbitration.* † *E. g.*, Cleveland, Ohio.

distance from each other so as to catch a local traffic, as is almost always the case, competition is at once destroyed, for no one will walk even two blocks farther than he need in order to patronize a rival company's line; more especially as the time lost in so doing will usually more than match any gain in speed or fare on the part of the more distant company's cars. Now, it is only for those taking a long ride that the item of comfort becomes important; but in taking a long ride the traveller is obliged to approach the suburbs where railways are far apart, and, as we have just seen, in such a case the paramount considerations are nearness and speed.

Although competition is thus so powerless as a regulator of street railway traffic, the faith that has been reposed in it by American cities is remarkable. From a list in the Street Railway Journal of July, 1890, the following figures have been computed:

468 American cities and towns have 878 street railways. Of these 335 have but one railway, 65 have 2, 23 have 3, 15 have 4, 8 have 5, 3 have 6, 4 have 7, 3 have 8, 2 have 9, one has 10 railways, one 11, one 12, one 13, and one 15. San Franscisco has 16, St. Louis 19, New York 19, Philadelphia 21, and Pitsburg rejoices in the possession of 24.

The attempt to produce competition as shown in these figures has not been attended with any marked success. In fact, in face of the difficulties that have been sketched above, it would be very surprising indeed if it had been. In Philadelphia a syndicate has been formed, which controls most of the roads in that city. When the elevated roads of New York were built, an effort was made to keep the three lines distinct; but this effort was defeated, and they quickly amalgamated. The street railways of Newark, N. J., have been consolidated, and Boston, Detroit, Buffalo, Rochester and Columbus, Ohio, have recently followed the example. The Toronto City Council, after considering various proposals to introduce competing lines, have also, recently decided in favor of "an *exclusive* right to operate street railways in the city."

Mr. C. E. Stump, Vice-President of the Street Railway Publishing Company, New York, under date of Jan. 12th, 1891, writes: "It is impossible to tell how many lines are being controlled by syndicates, as lines are continually being bought up. Where the lines of a city are not all under control of a syndicate, those which are retain their individual name. The railroads of New York city are controlled by the Metropolitan Traction Company." Mr. Freeman, of the Detroit Street Railway, says: "Agreements usually exist between the street railways not to interfere with one another, and to run on common agreements."

So that it is evident that competition among street railways exists only in name, and that if the American cities in the list from which the writer obtained the above general figures granted charters on the supposition that they were going to obtain competition, they made a mistake.

The sooner that attempts to regulate this industry by competition are utterly abandoned, the better. Let us face the inevitable; and avoid the useless waste of capital involved in such efforts, by recognizing the true character of street railway traffic as a monopoly, and by dealing with it as such.

2. *Waterworks.*—The monopolistic features of waterworks are so apparent that they have been more clearly seen and more generally acted upon than in the case of any other of the industries mentioned. The necessity of water supply is so evident; the cost of providing it is so great; the public annoyance from the breaking-up of streets in the laying of mains, etc., so considerable; the immediate attention necessary in case of a break so unavoidable for the safety of the surroundings; in short, the whole industry is so intimately connected with civic interests, that very few American cities have attempted to create more than one system—far fewer than have duplicate systems in gas, or electric lighting, or street car service.

In Europe the movement is clearly in the same direction. Most of the cities provide their own waterworks; and, where this duty has been delegated to more than one company, the resulting inconvenience has been so great that there is an agitation in most places to abate the nuisance.

London has 8 water companies supplying 5,650,000 people. One charges £2 4s for what another charges £3 17s, and for the same service that the Glasgow waterworks, which are owned by the municipality, charge £1 9s 2d; with the further difference that Glasgow provides 50 gallons per day, and the London companies provide only 30 gallons per head of a population seven times as great. The London companies charge rates according to the rentals of the houses that they supply. These rentals have trebled since 1855, have doubled since 1868, and have increased 25% since 1880; and yet the companies though charging these increased rates, actually supply less water per house than they did 10 years ago. The value of their stock doubled in the years from 1871 to 1883. Some of the companies had a maximum dividend of 10% provided for in their charter; this limit two of the companies have reached. One company having no legal limit to its dividends pays 12⅛%, and the lowest pays 6%. The total value of the waterworks in the city is £33,000,000, and after deducting running expenses, etc., it is estimated that they repay their owners $500,000 a year over the current rates of interest. In so vital a matter to the city, moreover, as protection against conflagrations, the Fire Brigade finds itself continually hampered by the lack of pressure and scarcity of water under the present system. In February, 1890, a committee was appointed by the London County Council, to consider the taking over of the various waterworks. This committee has reported in favor of the scheme and the Imperial Parliament is being asked for the necessary powers.

3. *Gas Supply.*—In this industry the tendency to monopoly is scarcely less marked. The difficulties of attempting to regulate it by competition and the benefits of managing it as a recognised monopoly, are so clearly proven by the past experience of American and European cities that a reference to some of them will here be made.

In London, England, the principle of assigning each company a distinct territory which had been in vogue for 20 years was abandoned in 1842 and competition encouraged, As a result, six different companies laid mains in Oxford Street. During the pandemonium that ensued, such little incidents as waste in leakage resulting from a change of service hastily made, the connecting of a house service with the mains of a wrong company, or even the connecting of two different companies' mains together, passed unnoticed in the clamor for customers. In the war of rates that ensued, consumers obtained gas for one-sixth the price of production, while, through the jealous secrecy maintained by the companies, some obtained their gas for nothing by representing themselves as taking from some other company than the one demanding payment.

This state of things could not long endure. The tearing up of the streets for the frequent changes of service presented such an obstacle to traffic, and the escape of gas became so dangerous as well as disagreeable, that the authorities had to interfere. In addition to the public inconvenience, the companies suffered severely and several became virtually bankrupt. In 1853 the 13 companies came to terms with one another, divided the city into districts each taking one, ceased competition and each adopted one uniform rate for the whole of its district. Prices were greatly increased, and it was evident thatthe consumers would now have to pay for the unnecessary mains, etc., that had been buried during the enthusiastic period of competition. Notwithstanding the public outcry a Parliamentary inquiry, after careful consideration, indorsed this action, and provided a system of regulations. Amalgamation of the companies followed, and by 1883 the thirteen companies had become three. Their stocks now sell at from two and a half to three times their nominal value and their owners receive from 12 to 18 per cent. interest per annum. In the English provincial towns, and on the continent, much the same result was obtained more quickly, *e.g*, in Paris the companies were "districted" in 1839, and consolidated in 1853.

The same experience has been passed through by upwards of a score of American cities and always with the same result. The case of Detroit is a typical one. The mayor, Mr. H. S. Pingree, writes as follows:—

"A franchise was granted to a second company to do away with the monopoly of the first. One of the conditions of the grant was that there should never be any com-

bination, or division of territory under penalty of the forfeiture of the franchise, and of a heavy bond, which was entered into at the time of the grant. Within two years, as I remember it, the companies divided territory, each taking one-half of the city, exchanged property according to location, and immediately put the price of gas up to the old figure before competition commenced. The city fought the case in the courts, but was eventually beaten, and the companies have been going along in their own way ever since."

A Congressional Committee has reported that "it is bad policy to permit more than one gas company in the same part of the city." "Competition involves at least two or three and even more works where one would be sufficient. It means two or three or even more mains where one would be ample. It necessitates a corresponding number of different services in each house, and an enormously large number of inspectors and collectors, and all for what? Cheaper gas? By no means. The enormous sums of capital which such a system wastes will certainly try to earn dividends in some way or other, and the only means is in high prices of gas, or else what amounts to much the same thing, in a poorer quality. When the public is finally compelled to take hold of the matter in earnest, to remedy the abuse, as it always must sooner or later, the large sums of wasted capital are always put forward as entitled to some consideration in fixing the rates."*

Whether cities have learned lessons from history, or whatever the reason, fewer attempts at competition in the gas industry have been made of late years than formerly, and the business may now safely be set down as an absolute monopoly.

4. The *Electric Lighting* industry is so young that it has scarcely yet been sufficiently studied to be relegated to a final position. From a comparison with the characteristics given on page 13 as peculiar to municipal monopolies, it may fairly be included in the number, as it possesses them all to a very considerable degree. It has become a necessity; it occupies favored tracts of land; the plant must be in or very near the place supplied; it is an industry of increasing returns; and requires certainty and harmony in its workings. Of the *Telephone service* much the same may be said. The last named consideration, however, that of certainty and harmony of arrangement, becomes far more important. A prime necessity in the use of the telephone, is the certainty that from any one instrument any other in the city may be reached through the one central office. A choice of lines would be no less confusing than would be the necessity of choosing one of half-a-dozen alternative routes when mailing a letter. One would always be possessed of the exasperating fear that he had chosen a wrong one, and that his message would, after all, fail to reach its destination.

Probably the most characteristic feature, both of electric lighting and of telephone service is their occupation of the public streets, either above or below ground, for their wires. One has but to look about to see the undesirability of increasing the unsightly maze of wires above our heads. On the first appearance of these industries, almost every town, carried away with enthusiasm, gave some company untrammelled rights, trusting that, if it abused its privileges, some other company would readily enter into competition with it, as in ordinary undertakings. From their peculiar monopolistic nature, this expectation could not be realized; and where competition did ensue, it was of the deadly character previously mentioned, giving the consumer a short ecstatic period of cut prices, but ending in the ruin of one company or its consolidation with its rival. In either case the survivor would not forget to charge sufficient to make up the loss it has sustained. So, too, it often happens that in the ærial labyrinth there are some "dead wires" of defunct companies left there when the smash came. These go to swell the constantly increasing number of overhead wires. It is evident that this cannot go on for ever. The public cannot consent to have their sidewalks fenced off from the roadway by a palisade of more or less ungainly poles.

Not only this, but the multiplication of wires constitutes a very real menace to public safety. The following, from a recent Chicago paper illustrates a common occurrence:—

*Prof. James, *The Relation of the Modern Municipality to the Gas Supply.*

"The fire-alarm wires became crossed and tangled with those of the telegraph and telephone companies, cut by the firemen. The result of this was to render useless the gongs and bells in the police stations and newspaper offices. The great gong in the city hall got out of order at midnight, and refused to record an alarm. In the offices the bells, the connecting wires of which were crossed with telephone wires, rang almost incessantly."

It is evident that quite apart from financial considerations, the sudden disorganization of the system of communication upon which the order and safety of a city are based, is a very serious matter. The advantages of reducing the wires to the least number possible, when strung overhead, are manifest. When stretched in subways the advantages of limiting the number are of another kind. Here cost becomes the ruling factor, and increases with the number of wires, so that a vast and unnecessary outlay of capital must accompany any attempt at competition, such as we saw to be the case with the gas monopoly.

When electricity was first introduced as a lighting agent, it was opposed by gas companies, who claimed by their charters a monopoly. In Great Britain and Ireland an Imperial Act (45 & 46 Vic., c. 56), established that what they possessed was a priority, not of lighting, but only of gas supply. Electric companies at once entered into competition with gas; and this competition has had a very considerable effect upon prices. As previously pointed out,* however, each seems to be specially fitted for some kind of illumination; and it is a significant fact, that in the United States, more than 300 companies are operating electric lights in connection with their gas works, and that during the year from March 1889-90, the gas companies increased their ownership of electric lights by almost 50 per cent.†

Where competition is attempted in telephone service the kind of warfare that characterizes these monopolies is shewn in a couple of Canadian instances. In Montreal the Bell Telephone Co. is opposed by the Federal Telephone Co. Mr. Size, the President of the former Company, says :—

" Of course the business in that city (Montreal) is being operated at a loss, but we are doing five-sixths of the business there." Of Peterborough, Ont., where the Bell Co. is also opposed, he says :—" We are now supplying instruments free of charge to kill opposition."‡

Before leaving the subject of electrical operations it is necessary to point out that one undertaking is often considerably impeded by the near presence of another; and that their reciprocal action one upon the other is often productive of serious and unexpected results. Thus where an electric street railway is in operation, the " return current " from the car always interferes with the telephone service to a greater or less degree. And again, when an electric light wire touches a telephone wire the latter immediately suffers, often burning out the instruments, and becoming a source of danger to the neighborhood.

An attempt has been made in the preceding pages to prove that some industries necessary to city life, *e.g.*, water supply, street railways, gas and electric lighting, and telephone service, are, from their nature, incapable of regulation by competition. § If this be true, and competition is attempted, it can only be carried on at great loss of capital and public convenience. If the monopoly be partially recognized, as where

* Page 11.

† The electric street railway company, the gas company, and the electric light company have recently amalgamated in Danville, Ill. In two Canadian towns, Sherbrooke, Que., and Moncton, N.B., the electric light, gas and waterworks are the property of one company, with good financial results in each case, according to all accounts.

‡ Quoted in *The Monetary Times*, Toronto, January 16th, 1891.

§ " A new corporation invariably joins with the old, and the thumbscrews of the double monopoly are turned up tighter." *Inaugural Address* of the Mayor of New Haven, Conn., Jan., 1891.

each company is confined to one district of the city, all the advantage of carrying on a business on a large scale, *e.g.*, a minute division of labor, and with it a more thorough classification and harmony of management is lost. The city, instead of reaping the tremendous advantages arising from its dimensions, is virtually split up into a number of small towns, requiring entirely separate plants for each, suited to its size, thus involving a great waste of capital. So that all the chances for possible cheapness lie on the side of a monopoly, absolute and undivided. The true way to deal with these industries then, is to recognize fully their monopolistic nature, discountenance any attempt at competition or partitioning the city into districts, and maintain each franchise intact.

As the ordinary means of keeping these industries within proper limits, viz., competition, has failed, and as human nature is not yet free from selfishness, we must find some method by which we may secure the body politic from the inconveniences that will result if the supply of such services is left to private initiative free from controlling conditions. Nowhere is there a more absolute break-down of the premise on which is reared the policy of *laissez faire*, viz.: that what is most for the interest of the individual, is also most for the interest of the community.

Where shall we obtain the power to compel the carrying on of these undertakings in a manner not antagonistic to the interests of the general public? There can be but one answer, viz., in the power of control vested in the municipal or the central authorities. The only question that can arise is, How far shall public control extend, and how large a domain may best be left to private enterprise? A thousand considerations must enter into the determination of each individual case; and according to where the line is drawn will the management of any monopoly be assigned its place in one or other of these two divisions:

1. Management by *private* enterprise, whether coupled with (*a*) private ownership, (*b*) private ownership with right of public expropriation, (*c*) public ownership.

2. Management by a salaried staff of public officials, the municipality owning the plant and carrying on the industry.

CHAPTER II.—COMPARISON OF PUBLIC AND PRIVATE MANAGEMENT OF MUNICIPAL MONOPOLIES.

In deciding whether any given municipality should assume full control of any one of these monopolies, or if not, how far it should go in imposing restrictions upon the private parties carrying on the monopoly, so many questions peculiar to the locality and the people interested must be taken into consideration, that any attempt at the drafting of absolute rules must be abandoned as hopeless. The greatest of these disturbing elements, and one which must be a factor in the question everywhere, is the *dishonesty* of public officials. This must of course vary in every town, according to the public sentiment and the morality of people and officials, the carefulness of the inspection given, the proportion that the salary of public servants bears to the expenses of the style of living they are presumed to adopt, and a hundred other things. Now it would seem that if we could free ourselves from this most difficult element, and neglect it for a time, we might be able to arrive at some general conclusions near enough to the truth to be of value, which would admit of qualifications to suit the different degrees of faithfulness met with in the different administrators of public affairs.

Section I.—Some Abstract Financial and Economic Considerations.

Bearing in mind, then, that for the present we are leaving this question of the relative efficiency of public and private service on one side, let us look at some of the *financial* and *economic* considerations that must be taken into account in deciding for public or for private control.

Three cases arise:

1st. Where the monopoly fails to pay expenses.

2nd. Where its earning power is near the border line of expenses, either above or below.

3rd. Where it is yielding large returns.

1. In the first case, where the monopoly is clearly a losing game, it is evident that the less the municipality has to do with it in the way of assuming the property the better. A town must reach a certain size before those industries we are considering can be made profitable, *e.g.*, to have a street railway in an ordinary town of less than 5,000 people is a folly for which some one must pay.*

Accordingly we find that it has been a general rule for the first street railway company established in a town to go under in the course of a few years. The plant is then bought up by some other company at a fraction of its cost;† and the earnings which were a loss to the first company may bring a surplus to the second, owing to the less amount of capital they have invested. When the municipality begins to think of assuming the business, it is also a general rule for the second company to urge the hardships undergone by the first, as if that were a reason why they should be paid more, when they have already profited by the disaster of their predecessors.

Great caution must be exercised to determine the true condition of affairs. In representing the returns of the business, if a good shewing is desired to be made, it is not uncommon to leave out of account such items as interest on the capital expended, any percentage for sinking fund or deterioration in value, etc. On the other hand, companies may find it advantageous to conceal their real profits, under the cloak of secrecy which many of them are still unfortunately able to cast over their proceedings. There is a shrewd suspicion abroad that the huge masses of stock upon which some of them reckon dividends have been obtained mainly by the addition of large quantities of water. One of the great difficulties attending this subject in its consideration, either by municipal authorities or economists, is the almost insuperable obstacles in the way of obtaining reliable statistics. This has prevented investigation in this field; for if there is one thing more discouraging than another, more likely to cause paralysis of action, it is to find utterly conflicting figures given on the one hand by those who have all the means of knowing but whose interest it would be to suppress the truth, and on the other by those who, though honest enough, have no means of ascertaining whether the estimates they give are more than mere guesses. Some more adequate returns should be insisted upon than are at present obtainable from these monopolies in most of the cities of the United States and Canada. It is clearly an advantage to have the power of appointing an auditor to go over the books of the gas company in Toronto, rather than to have no such power as in Montreal, or as in the cases of the street railway companies of both cities. This information might be given to the public or it might not; but in any case it should be known to the authorities of the munici-

*How closely the prosperity of a street railway corresponds with the growth of the city it is in, is shewn by the following figures given by the Toronto Street Railway Co. during the recent arbitration :—

Year.	Population.	Passengers carried.	Trips per head of population.
1870	50,516	616,460	12.2
1880	75,110	2,869,664	38.2
1885	105,211	7,386,208	70.2
1890	160,141	16,310,444	101.8

† In St. Thomas, Ont., the Street Railway that cost $14,000 to build was recently sold for $2,300.

pality. It would not be any injustice to the owners of the monopoly; for, as the business is one not susceptible of competition, it cannot be injured by the outside world coming into possession of the knowledge. The only way in which it could result in a way detrimental to the owners would be by its being taken advantage of by the urban authorities, who, from the intimate connection between these monopolies and the public interests, have a right to the information; and if it were granted by the owners it would at once free them from that "carping criticism, unreasoning hostility and base suspicion" under which they groan so bitterly, and which is no doubt, in very many cases, quite uncalled for. The remedy, however, lies in their own hands.

This right of secrecy was no doubt granted when these undertakings were first set on foot, in the carelessness born of novelty, enthusiasm and ignorance of results. But it is high time the public authorities disposed of this unfair advantage.

Our municipal authorities themselves have been scarcely guiltless; and the book-keeping of some American cities in regard to those monopolies over which they have had even full control, has been done in a manner mystic, wonderful, which none should ridicule, for surely none can understand.

2. Where the earning power is upon the border line of expenses, it may be advantageous for the municipality to acquire the industry in the following cases:

(*a*) Where a town is growing, so that, its future being assured, a surplus may be relied upon in time.

(*b*) Where the town already owns one such monopoly, and can economically manage another in connection with the first, *e. g.*, by utilizing for electric light the power necessary for waterworks. In such a case care should be taken to keep the accounts of each perfectly distinct.

(*c*) Where a municipal corporation can use its credit to borrow money at a considerably smaller rate of interest than a private company and this difference is sufficient to turn a deficit into a surplus at the end of the year.

The position is not changed by the company using its own money instead of borrowing; for its members will hardly enter into an undertaking offering lower interest than is obtained from, say, first mortgage bonds, upon which there is no risk. The rate of interest upon such bonds is almost always more than that yielded by city debentures. The constitutional limit placed to the borrowing power of cities in the United States, although useful as a check to rash speculation, has in some instances been an obstacle to progress. It has hindered the attainment of necessary property which was rapidly increasing in value, so that when at last the city has finally obtained what it needed it has had to pay many times what would at first have been necessary. A case in point is the taking over by the City of New York of the lands required for straightening streets. Another is the difficulty met with by many cities of the Central and Western States in the assumption of their gas and waterworks, etc. The limit should at any rate be more elastic. The attainment of a valuable and necessary asset in return for the money borrowed to win it, need scarcely be looked upon as a menace to a city's future.

(*d*) Where the management of the private company is so inefficient that the municipal authorities can certainly improve upon it, so as to make the investment a lucrative one. This is a state of affairs that, according to the advocates of private initiative in business matters, can never occur.

Social considerations. A company, under the terms of their charter, sometimes cannot be compelled to conform to the wishes of the municipal government, *e.g.*, in the matter of extending their system to sparsely settled suburbs, or the giving of such conveniences as the transfer of passengers from one route to another. If the change proposed is financially expedient for the company it will, of course, usually be ready enough to comply; but it would often not pay the company to do so. If the municipality is obliged to subsidize the company to get it to carry out the improvements, it is clear,

from the nature of things, that since the company must be better able to tell the real cost of such improvement than the city officials can be, and since there can be no competition with the established company, the city must always pay very dearly indeed for the improvement. In such a case the exercise of the right of the community to take over the company's franchise, if the municipality possesses the right, may be a convenient way out of the difficulty.

Indeed, it is the duty of the city government to provide for the free extension of city limits; and, by securing for the people of the suburbs sure and easy access to the centre, together with the ordinary amenities of city life, to relieve the central parts of that excess of population which is now its curse. Not only this, but it is the duty of the community to provide for those who cannot otherwise afford them at less than cost, and even free where necessary, those essentials to a decent life, such as abundant pure water, light, etc., which have been dwelt upon in the beginning of this paper.

Private companies cannot be expected to drain their pockets to accomplish this result. It is as much the work of the community as is the free public school system of which America is so proud, and should go hand in hand with it. The intimate connection between filth, disease and the commoner kinds of crime is becoming more clearly understood. Glasgow supplies free fountains for the use of the poorest classes to draw supplies for domestic purposes, and the hospitals and charities of the city are supplied gratuitously with water. The city also pays part of the cost of lighting the stairs of tenement houses with gas; and it arranges with the street car company for certain "runs" much used by workmen at the rate of a penny for a "run" of considerably more than a mile, while morning and evening cars are put on at a charge of about a cent per mile.*

It is said that in London, England, the sanitary improvements of the last few years have lowered the mortality rates by a third.† Although this is probably an over-estimate,‡ still a great improvement has undoubtedly taken place in the mortality rate, and, as an accompanying result, probably a still greater decrease in the amount of sickness, for which there are no statistics. All this points to an increasing attention being paid by cities to their sanitary condition.

"A solemn duty exists to treat cleanliness and police and drainage and water supply as questions of business and philanthropy to be settled on their own merits, from which there is for honest and humane men no escape. In this lies the solution of the great municipal problem. There is no other way in which great cities can be saved."§ Whether one of these industries will reap for the city a rich financial harvest is not the first or only question which should be taken into consideration. How they can be best used for the general well-being of the citizens is a more important question. That this consideration varies in importance as applied to the various industries we are considering is of course apparent. Sewers are necessary though they yield no financial return. Sufficient water supply and a certain amount of street lighting are not less essential; although for the latter, gas as providing a less brilliant, more divisible and, therefore, less expensive light than electricity, is more of an essential and less of a luxury than it. In very large cities cheap transportation is an essential, in small cities it is not. And we have not yet arrived at the point, nor probably ever shall, when telephone communication will exert such an influence upon the people at large that its character will be changed from being a luxury to being an essential.

---

* But although Glasgow has extended her parental policy to the providing of public picture galleries for the middle classes, and public laundries and cooking stoves for those at the lowest end of the social ladder, she still empties her sewerage directly into her dock-bordered river, a fact which anyone who has had occasion to travel upon the Clyde has distinct cause to remember.

† A. Shaw in the Century Magazine, Nov. 1890.

‡ See *Statistics and Economics*, by R. M. Smith, in Vol. III. of the Publications of the American Economic Association.

§ *Municipal Government of New York*, in the North American Review, October, 1890.

3. Where a *large surplus* is being earned by one of these city monopolies, it is plainly better that the gain should go into the civic treasury than that it should find its way into the pockets of the holders of the monopoly. This is especially true in view of the difficulties in the way of an equitable mode of levying taxes in city communities. These difficulties have presented themselves so strongly to writers upon taxation that some of them have seized upon the apparent solution or partial solution of the problem of city taxation presented by the revenues which these monopolies can be made to yield. They would turn this money into the city coffers and lower general taxation

But this is merely putting in the place of *direct* taxation with its easily seen cases of injustice, a mode of *indirect* taxation which though not less unjust is more difficult to trace, and therefore more difficult to rectify. Like indirect taxes in general, this may be paid with less outcry than a direct tax would be, because those paying it do not know that they are being taxed, but it is not less unfair on that account and but little less injurious in its effect. Raising funds for civic necessities in this way has, of course, the incidental advantages possessed by all indirect taxes, *e.g.*, that they are collected in comparatively small sums, and are therefore not so much felt by the consumer as a direct tax payable in large amounts would be. But rates for water and lighting paid quarterly, amount to sums sufficiently large to be seriously felt by the ordinary householder; and the case of street railway traffic, to which the above rule of small payments would particularly apply, presents a fatal objection in the fact that a tax upon it is a tax upon the lower and middle classes only. The cars of a street railway are scarcely used at all by the very wealthy who have their own horses and carriages. This, then, is not a solution to the great problem of finding an equitable mode of taxation for American cities.

The lesson from the preceeding is, that when a city assumes control of one of its monopolies, whatever mode of future management may be decided upon, whether public or private, that management should be based on the principle that only a very moderate surplus, if any, should be obtained, and that the conditions attached to the franchise and the prices exacted from consumers should be fixed in order to bring about such a result.

Section 2.—Relative Efficiency of Public and Private Servants.

This is probably the most important as well as the most difficult subject to consider in connection with the management of Municipal Monopolies.

It is *difficult*, from the state of affairs never being precisely the same in different localities, and from the manifest obstacles in the way of arriving at truth when the only persons who could give the desired information are those who are interested, who will give us only such returns as they see fit, for business purposes, to publish, unaccompanied by any guarantee of their accuracy.

It is *important*, from the fact that, in the ordinary city, the industries we are considering do not yield such unlimited revenues that an incapable management cannot change a paying concern into one with a deficit; while an administration that is capable, but corrupt, may so use the funds derived from their control of public industries as to intrench themselves almost impregnably against the attacks of honest citizens. A notorious example of this is furnished by the gas ring of Philadelphia.* Successful crime is the most contagious of all diseases; so that in such a case, the most important consideration to be regarded is not the direct financial loss, great as that may be.

Waterworks, street railways, etc., have attained their importance during the last half century, the same period that has witnessed the triumph of democratic principles of government. We should, therefore, expect to find, where the management of these industries has been taken over by the municipality, that that management will partake of the evil characteristics as well as of the good, belonging to "government by the people." This form of government is supposed to reflect very closely in the rulers,

* See Bryce's *American Commonwealth*, Part v., Chap. 89.

the moral peculiarities of the ruled Now, it may probably be set down with perfect safety that the body of British electors, or the residents of British cities are neither more intelligent, more honest, nor less democratic than their compeers on this continent. Yet it is generally conceded that British cities are more fortunate in their selection of magistrates than are those of the United States or Canada. Why should this be so?

The piquant frankness with which American newspapers are wont to explain to public servants their present and past failings is not calculated to inspire capable men with much enthusiasm for civic honors. But what is probably of more importance than this in determining the personel of our city councils as compared with those of England, is our lack of a wealthy class, who, having the time to devote to the management of public affairs, enter political life without any desire to make an income by it, and thus maintain a comparatively high standard throughout the whole of public life.

Capable Americans are too busy making money to spend time in the unappreciated labors of city management. In Germany, on the other hand, where a bureaucratic system calls the best men into public service, we find public affairs better attended to than private. It would seem that in this matter "we cannot spend our penny and keep it." In America, there has been an excessive application of intellect and ability to the furtherance of private interests, and public interests have suffered accordingly.

As a result of this selfishness of the capable (with, of course, the usual honorable exceptions) a poorer class comes to the front. This would not be so serious were it not that upon the character of the head of a department depends so much of its efficiency. The ordinary paid subordinate sees before him no very high or lucrative situation to be atttained by exceptional brilliancy. It is not the custom to pay *any* civic servant such a remuneration as for example many bank managers obtain; and while there may be but few very good positions in private business, yet every employee feels that he *may* reach one, and the chance nerves him to higher endeavor, and makes him satisfied with smaller wages at first. It thus happens that private concerns pay less salaries to begin with and offer greater prizes in the end than public departments.

Besides the difference in possible remuneration, there is the difference in the way in which advancement is to be obtained. . The public servant knows that what his principal desires of him is the quiet performance of his duties in such a way as not to attract public notice, and the criticism which is pretty sure to accompany it. Nothing new is wanted; above all, no experiments. In the routine of office work, the public employee sees more and more clearly as time goes by, the motto before him:

"All hope abandon ye who enter here,"

and he relapses into a vegetative existence, waiting for his superiors to die that the way to his advancement may be cleared. But this is not the only mode of clearing the way; and when he observes the potency of outside pressure upon his chief, he may give up the attempt to rise by merit and may direct his attention to the procuring of the necessary influence.

The private employee knows he is being watched closely by his principal; a man who understands the intricacies of the business, and whose repulse to a requisition for increased salary is final, until it is revoked by a conviction of the increased value of the services rendered. With a knowledge of the absoluteness of this decision, the private employee sets himself to earn the increase instead of manipulating wires.

When civic officials are exposed to dangers and temptations such as these, the withdrawal of capable men from public life as representatives of the people, is the more to be deplored. The public service is surely not less a duty calling for unselfish action by those competent to manage its affairs, than would be its defence if physically assailed. In the meantime, municipal politicians may very often be placed in one of two classes, the honest incapable, and the dishonest incapable.

The *dishonest incapable* goes into politics "for the money in it," and is the legitimate result of the excessively wide franchise which has been very generally granted in America with no guarantee for its intelligent use. This, and the extent to which federal politics are carried into municipal affairs make the United States city his recognized home. As a "ward politician" he is thoroughly in his element; and representing a small constituency, he makes it his "business" to know everyone in it. The honest, he can often neglect; for they show their disgust of the way things are managed, and their contempt for him and his ways by "not taking any interest in municipal matters;" precisely the course he would have them pursue. With those "ward heelers" who sympathise with his view that "the city is made for the aldermen," he has more difficulty. But, by the long discipline he undergoes before he has reached the top, he has learned the system of "give and take," which is necessary to prevent "unpleasantness" among his friends.

Another result of the long training he has undergone with the prize of the spoils before him as an incentive in the race, is an experience which makes him more than a match for the *honest incapable* who has been placed in the council by a passing wave of public interest produced by some impropriety more glaring than usual. As a result of their combined efforts, we have the American system of municipal book-keeping.

Under circumstances in which truth is so hard to discover for the average citizen, and he knows not whom to believe where anyone may be interested, it is important that the central power should take steps to obtain accurate returns. And yet in the census reports both of the United States, and of Canada, nothing of importance is shown in this department. In Great Britain, the sessional papers give closer and more accurate figures; but on this continent it is still possible for officials to charge the expenses of one department to such other department as is best suited for their purpose, *e.g.*, the expense connected with running electric light plant is sometimes put to the debit side of water works account, and cost of refitting carbons, etc., to fire alarm department.*

Now, it is evident that this outlay must be entered in the books somewhere, and it just as evident that if there is no check upon him, the head of two departments, one paying, the other losing capital, may render the unprofitable one less unpopular by charging its deficiency to the former.

This may be done in all honesty, where an electric light plant is being run at night by the same engines as supply the water works during the day; a great saving is effected, and who shall say *exactly* how much coal, labor, and wear and tear of machinery should be ascribed to the cost of electric lighting and how much to waterworks? This is a question for technical experts to settle, and there is evidently a considerable margin for honest disagreement. But if we find that under such circumstances *none* of the expense is charged to the electric lighting department and *all* to the waterworks, we may be tolerably sure there is some "mistake;" and to accept results so obtained as the happy result of municipal control of electric light as compared with private management is most unfair to the latter.

Again, in the case of municipal waterworks, the city generally arranges a schedule of rates calculated to just meet expenses and no more. What are *expenses?* Should interest on the cost of construction be reckoned in the list? If so, what rate of interest? (*a*) That paid on the construction bonds, of say ten years ago, when money was dear, or (*b*) that paid on present cheaper loans effected by the city? There are reasons for adopting either of the two methods and according to the rate decided upon will the water rate be placed at a higher or lower figure.

But if we find a city where the waterworks debt has all been paid, say by taxation, and where accordingly there is no interest at all to pay, or, as is the general rule, part of the debt is paid and part unpaid; if, in the first case, no interest is taken into account at all, and, in the second, only that paid on the still outstanding debt, it is evident that the water rate charged citizens will be less than if these interest items were

* See the statements of Mr. Francisco at the Electric Light Convention at Cape May, N.J., Aug. 19, 1890.

debited to the waterworks account, as a private company would be obliged to debit them in order to make both ends meet. Where the citizens have thus taxed themselves in order to obtain low water rates, it is scarcely fair to regard such reduced rates as a triumph for municipal management.

Under any system of management, breakages must be accounted for when they occur. But how about deterioration in value? A buried gas pipe has a life of so many years, at the end of which it is useless. Some account should be taken of this, and, as each year contributes to the destruction, so should there be an annual estimate of the loss put by as a sinking fund to replace the pipe when necessary. Companies take this into consideration and charge accordingly. The city official does not always do so. Hoping it may not occur in his time, and desirous of pleasing his constituents by reducing the gas or water bills that always seem so large, he puts off the evil day, on the principle "After me the Deluge."

While considering the advantages that civic officials have, or take for themselves, as compared with the servants of a private company in rendering their accounts and estimates, we must not neglect one great disadvantage. When the municipality owns and controls one of the monopolies, it is the custom not to charge the city with the amount of service it requires of that department, *e.g.*: if a city owns its waterworks, it does not usually pay for water required for street sprinkling or fire purposes; while, if a private company were carrying them on, the city would be obliged to pay for both.

Section 3.—Some Comparative Statistics.

How a system has worked in the past is perhaps the very best criterion of its value. But to form an absolutely accurate estimate of past experience, we must be in possession of *full* information regarding it. This is evidently impossible. We can never know a period in the history of an individual fully; for to do so, it would be necessary to penetrate his thoughts; and even he could not enlighten us, for there are numberless outside influences continually at work upon him of which he is himself unconscious. If impossible in the case of an individual, how much more so when we consider an industry, a city or a nation. But the fact that we cannot hope to arrive at absolute truth is surely no reason for ceasing our endeavors to approach it more closely. The more uncertain our statistics, the more rough must be our conclusions drawn from them. The science of the statistician is one of comparatively recent origin. Its importance is becoming more clearly seen every year; more accurate methods are being arrived at; and each succeeding Government census embraces many new departments.

In the British "Parliamentary papers," reasonably reliable figures may be found; but in America these municipal monopolies have not as yet been reached.* We must therefore depend upon private enterprise for such knowledge as we possess regarding their working in America, except in a few States having special Boards of Gas and Electric Lighting Commissioners.

Waterworks—In this department, credit is due to the very complete descriptions and figures given in the "Manual of American Waterworks" from which the following facts are gleaned:—

Of the 1,960 waterworks in the United States, 818, or 41.7 per cent. are owned by public corporations, and 1,106, or 56.4 per cent. by private companies; remainder unknown.

Of the 83 waterworks in Canada, 48, or 57.8 per cent. are owned by public corporations, and 35, or 42.2 per cent. by private companies; remainder unknown.

But although more than half the works are in the hands of private individuals, yet, owing to the large cities almost invariably owning their own water supply, the population served by private works is only about one-half that served by public works.

* With the exception of a short notice of telephone service in the United States census of 1880.

Coming now to the prices charged for equal service by public and by private waterworks respectively, the editor of the "Manual" finds the following differences:—

The average total family rate for 318 public works is $21.55 per year.
" " " 430 private " $30.80 "

so that the private charge is 43 per cent. more than the public charge.

In Canada the above charges are, public $21.07, private $31.43.
In Ontario " " " $21.12, " $25.01.

In Canada as a whole and in Ontario by itself, therefore, the private charge is 50 per cent. and 20 per cent. respectively, more than the public charge.

But if a system has *cost* more it is only fair that it should *charge* more for what it supplies; but

In the United States, including the Pacific States, the cost of private works per family was 15 per cent. more, while they charge 43 per cent. more than public.

In the United States, excluding the Pacific States,* the cost of private works per family was 3½ per cent. less and they charge, 31½ per cent. more than public.

In Canada, the cost of private works is 42 per cent. less per family, and they charge 50 per cent. more than public.

In Ontario, the cost of private works is 35 per cent. less per family, and they charge 20 per cent. more than public.

In regard to the above figures, which shew so great a triumph for public, as compared with private ownership of waterworks, the objection might be urged that they are the returns for rich men's requirements, and that the ordinary citizen does not require water for a horse, or to wash a carriage, which are, it may be remarked, included in the editor's estimate of family consumption. A close examination of charges shews, however, that little change in the above results would be effected by taking into account the price of the first water tap merely.

Applying the criticisms of public management given on pp. 26-27, the advocates of private control will immediately claim that these figures are of no value, since municipalities do not expect to meet interest on the whole cost of the waterworks, nor yet do they provide a sinking fund for deterioration in value, that the plant must undergo from year to year; and, therefore, that to the charges of public works, should be added yearly a certain percentage of the cost price. As a matter of fact, however, this is far from correct. In sixteen towns and cities of Ontario, having public waterworks, 98¾ per cent. of their cost is still unpaid; and an examination of American city finances shew that we are perfectly safe in estimating the debt on public waterworks as over 90 per cent. of their cost. The charges on water are usually placed high enough to cover interest on actual debt; as a result, the only advantage possessed by public works over private, in this matter of unpaid interest, is the interest on this 10 per cent. of the cost price; which at 5 per cent. would amount to one-half of one per cent. per annum. A sinking fund is not often provided by civic administrators, the cost of repairs being counted when they occur. On the other hand, however, many cities are in the habit of raising part of their revenue from a surplus water rate,† so that the charges of public works are thus higher than they need otherwise be.

* The reason for excluding the Pacific States is that large irrigating projects are combined with the water supply of towns. The difference there is six times as great as in any other group of states, the cost of public works being $62 per family, and for private $275.

† Toronto has raised $290,000 in this manner during the past six years.

In favour of public charges also, is the greater sum paid by a city for the water required for public purposes, *e.g.*, street sprinkling and fire supply, where a private company supplies the water, when compared with what is paid when the city owns its own works. In the latter case but a paltry sum is charged to general taxation, often nothing, seldom more than one-half of one per cent. on cost of the works. When obtained from a private company, this water is charged for; the annual charge varying from 1 per cent. on the cost price of the works, to 6 per cent.;* the usual amount being about $2\frac{1}{2}$ per cent.

These additional advantages and defects of municipal waterworks, as compared with private works, (a comparison which we are not able to institute with entire satisfaction, partly because of the defective way in which civic departmental accounts are rendered, and partly from the absence of collected statistics), might probably be set off against one another. If so, the tremendous advantage of public over private ownership of waterworks, regarding their cost and the prices charged is evident from the figures just given.

If the charges of public waterworks bore the same proportion to those of private companies, as their cost bears to the cost of private works, the cities and towns of the United States might on the average put by 5 per cent. of the cost of their works annually as a surplus or sinking fund, those of Ontario, 11 per cent., and those of Canada, 25 per cent,† over and above any provision that they now make. The advantages of public ownership are much more apparent in large cities than in small. The majority of American cities, having a population of more than 10,000, own their own waterworks. In Great Britain also the large cities adopt the same policy, particularly those where a reform in municipal government has recently been effected, *e. g.*, Birmingham, Glasgow and Liverpool. From an early recognition of the intimate relation between the general development of a city and its water supply, these cities have usually applied any surplus arising from its management to a further reduction in the price. The Public Health Act (Imp. Stat., 1875) permits local authorities to provide a water supply, if they have none; or, if the supply is inadequate, they may undertake the construction of works by obtaining the consent of the Board of Trade.

Gas.—According to returns given in an English Parliamentary Paper, there were, in 1889, in the United Kingdom, 405 gas works owned by private companies, operating with a capital of £38,000,000, and 173 owned by municipalities, worth £21,600,000. The average production, in cubic feet, of gas was, for the private works about 147 millions, for the public $171\frac{1}{2}$ millions, or one-tenth more,—*i.e.* public works are larger than private. From each ton of coal used the private companies get 10,242 cubic feet of gas, while the public works get 9,975. This difference may arise from the different grades of coal used, or from the different processes used in extracting the gas. A process which extracts more gas from coal leaves the residuals less valuable for the purposes to which they are now applied, *e.g.*, the production of dyes, ammonia, etc.; and it is a question how far the baking process should be carried in order to give the best financial results. The difference in policy pursued in this respect seems to have been decided upon some years ago; as the average since 1881 has been for private works 10,235 cubic feet of gas, per ton of coal, and for public works 9,986 cubic feet. A matter of much more importance, as showing the comparative efficiency of public and private management, is the amount of gas actually consumed, as compared with that made, the difference representing the leakage that occurs. The private companies delivered $92\frac{1}{3}$ per cent. of the amount made, the public $91\frac{5}{8}$ per cent., the private companies having the advantage of about 3·5ths of one per cent. in the efficiency of their systems in preventing loss of gas. Both private and public are gaining in this particular, as the average for the last 8 years has been 91.92 per cent., and 91.08 per cent. respectively, or a gain on the part of the private companies of $\frac{1}{4}$ of one per cent., and on the public $\frac{1}{2}$ of one per cent. The public works are thus coming up to the private in this respect.

* The latter is the charge in Brantford, Ontario.

† Calculated from the figures given in the "Manual" before referred to.

This greater loss through leakage experienced in the public gas works may necessarily accompany a division of the supply among a greater number of consumers, and the increased number of fittings rendered necessary by such minute subdivision. The average number of consumers on private works is 2,787; the average number of consumers on public works is 6,646; so that the average amount used by each customer on private works is 52,800 cubic feet, while the average amount used by each customer on public works is 27,500 cubic feet. With the same sized families, etc., the public works will require almost twice as many services as the private. The public works seem to be administered as effectively as they would be if they were under private management, judging by these results. Further, the public provision of gas has had the effect of making its use in small quantities much more general than where private companies provide the supply. Recognising the importance in city life of this extension of the use of gas, Birmingham is completing a system by which it can be delivered in as small quantities as one pennyworth at a time.*

The cost of private works was about £80,000 each. Public works each cost half as much again, while, as we have seen, dividing one-tenth more gas among twice as many people. Whether this greater cost of the municipal works was necessary under the circumstances is a question for experts.

The public works, in addition to covering expenses and establishing a fund of 4½ per cent. to 5 per cent. per annum to pay the interest on loans, annuities, sinking fund, etc., have poured into the civic treasuries in eight years the sum of £3,550,000, or seventeen and three-quarter millions of dollars, as a surplus, which has gone to the lessening of the burden of general taxation in their respective cities. But the price of gas in municipalities providing their own supply is necessarily enhanced by this method of raising money, which is virtually a tax on coal.

Notwithstanding the increase in the price of gas supplied by the municipalities in order to obtain this surplus, and also the fact that in many places the authorities provide the public lighting free, the price of gas from the public undertakings is less than that charged by the companies, as the following returns for the years mentioned shew :—

Average† receipts per thousand cubic feet of gas sold.

	1889		1888		1887	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
Companies.....	3	7.42	3	7.9	3	8.52
Local authorities	3	3.67	3	3.12	3	3.34
Companies' overcharge....		3.75		4.78		5.18

If the expenses of municipalities in managing their works are less than those of companies, it may be a valid excuse for the latter to charge more. Let us then compare expenses :—

Expenses per thousand cubic feet of gas.

	1889		1888		1887	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
Companies	2	6.74	2	5.65	2	6.68
Local authorities	2	4.4	2	3.14	2	3.67
Companies' over-expense..		2.34		2.51		3.01
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
Companies' profits	1	0.68	1	2.25	1	1.84
Authorities' do		11.27		11.98		11.67

From their profits, companies paid average dividends of £8 11s. 0¾d., per £100, During the previous year they paid £8 10s. 11½d.

Journal of Gas Lighting, Dec. 9th, 1890.

†Lowest price of private gas was 1s. 9d. at Plymouth, where a dividend of 12½ per cent. was also made
" " public " 1s. 10d. at Leeds, " surplus of £796 " "
Highest " private " 7s. 6d., and of public 6s. 3d. per 1000 cubic feet.

100 companies paid 10 per cent. dividends ; and 61 companies paid 10¼—17⅞ pe cent.*, the higher dividend usually accompanying a lower price, according to the "slid ing scale" plan, to be subsequently described. The highest percentages under a sliding scale were 16 per cent. by the Harrowgate Company, and 14¾ per cent. by the South Metropolitan Company.

In 12 cities the public gas works yielded a surplus of £290,000. In Manchester it is proposed to turn the large gas surplus over to the water works committee to meet outlays by that department. In view of the fact that there are 50,000 people in Manchester who do not use gas, while everyone uses water, it seems a peculiar way to pay for water-works. The gas consumers may, however, console themselves with the knowledge that their municipal gas works are to be put on a thorough business basis regarding expenses, etc., so that they will know exactly how much their special tax is.

Of 19 English city companies the average charge for gas is 52½ cents per thousand, and the cost of manufacturing is estimated to be 37⅓ cents.

In America, of 1,000 gas undertakings, only five are under municipal control.

Of 683 gas companies in the United States, the charge per thousand cubic feet was as follows :—†

7	companies	charge	$1.00	32 companies	charge	$1.50
24	"	"	$1.75	148 "	"	$2.00
57	"	"	$2.25	145 "	"	$2.50
20	"	"	$2.75	86 "	"	$3.00
26	"	"	$3.50	19 "	"	$4.00

120 companies charge intervening prices.

It is evident that the cost of gas, being largely dependent upon local conditions, must vary greatly in different localities. Is it not, then, somewhat remarkable that so many companies should have such gracefully symmetrical prices ? Probably "round numbers" are set for ease in calculation, irrespective of the price of production ; and, as companies are not prone to sell at a losing price, customers must wait for a reduction till production price is clearly below the next lower "notch" of 25 or 50 cents per thousand.

According to the Report for 1889 of the Board of Gas and Electric Light Commissioners of Massachusetts,‡ the cost in that State, of making coal gas is 40—57 cents per thousand cubic feet, and of water gas, 46—55 cents, representing the cost in the holder in each case. An increase of 50 cents per ton in coal, or of one cent per gallon in oil, makes an increase of ten per cent. in the cost of coal gas and water gas, respectively.

In Massachusetts, the average§ price charged in 1886 was $1.72 ; in 1887, $1.66 ; in 1888, $1.56 ; and in 1889, $1.49⅓ per thousand, showing a gradual decrease.

During 1889—

203	million	cubic	feet were sold at	$1.00	per thousand.
203	"	"	"	1.10	"
14	"	"	"	1.25	"
1,051	"	"	"	1.30	"
267	"	"	"	1.50	"
231	"	"	"	1.75	"
220	"	"	"	2.00	"

During the year, June 1888-89, these companies accounted for 91.65 per cent. of the gas made ; the leakage being thus very nearly the same as with the English companies and municipalities before referred to.

The company in Newburyport charged an average price of $1.98 per thousand, paying stockholders a dividend of 18 per cent. on their invested capital ; although to do so meant an increase of $1.45 per thousand over production price.

*The latter percentage was paid by the Company at Kingston-upon-Avon, operating under the Act of 1821.

† C. W. Baker : *Monopolies and the People*, p. 64.

‡ *Fifth Annual Report.* Public Document No. 35. Boston. 1890.

§ In 1889, eleven companies paid no dividends, and seven paid from surplus of previous years.

In Pittsfield, the company graciously lowered the price from $1.99 to $1.96. They still made a profit of 16 per cent.; to obtain which they charged 78 cents more than the production price.

In Taunton, the shareholders, in order to give themselves 15 per cent. dividends, charge $1.52; which is 36 cents above cost of production.

The Adams Co. charge $2.39 per thousand, when they might charge 62½ cents less, did they not pay a yearly dividend of 20 per cent.

The taxes paid by the companies in the State amounted in 1889 to $269,300, an average of 9.68 cents per thousand cubic feet sold. This was an increase over the previous year of about $3,000, while at the same time it was a decrease of one cent per thousand feet sold.

The several companies increased their net earnings from $1,498,000 in 1888, to $1,625,000 in 1889. After paying dividends of $941,400 in 1888, and $1,021,800 in 1889, there was left a net surplus of $547,000 in 1888, and $603,500 in 1889. Some of the gains that permitted this were:—an increase of $83,000 in the gas sold,* the net cost of coal and residuals† remaining about the same; the receipt of $54,000 for electric lighting, in place of $23,000 the previous year; a reduction of $10,000 in officers' salaries, $20,000 in wages of meter-takers, collectors, etc., and $14,000 in wages at works.

This great reduction in wages marks a further difference between the systems pursued by public and by private managers. In public works, higher wages are usually paid than in private, for the rougher kinds of work. In some cities, a minimum wage per day is fixed by the Council, *e.g.*, in Chicago a by-law exists, making $2 per day the least wage to be paid by the lighting commissioners. Companies, of course, get as cheap labor as they can.

A comparison has been instituted between the Boston Gas Company's works and the Municipal Gas works of Philadelphia, which is not supposed to end in confusion for the latter.

The output of Philadelphia was 2,173 million feet in 1880, and 3,150 million feet in 1889—an increase of 45 per cent. The output of Boston was 712½ million feet in 1880, and 1,312 million feet in 1889—an increase of 85½ per cent.

Each charged $2, in 1880; in 1889 Philadelphia charged $1.50 and Boston $1.30. Philadelphia provided *free gas for public purposes*; which, if paid for, would have amounted to 26½c. per thousand on all the gas made in 1889, and to 26¼c. in 1890. The *surplus* that the works earned for the city amounted in 1889 to $807,000, or 25½c. per thousand feet sold; and in 1890 it was $893,000, or 27c. per thousand.

Thus the Municipal works charged 51½c. in 1889 and in 1890 53c. per thousand more than cost price; which was therefore 98½c. in 1889 and in 1890 about 97c. per thousand cubic feet. If they had to add to this a tax of 6c. per thousand (the amount paid by the Boston Company), the public works of Philadelphia would still have been able to sell gas at $1.05 in 1889, and $1.03 in 1890. The difference between this and the price they actually charge, is so much gain to the city treasury.

In Boston the company paid its shareholders dividends during 1889 of $267,800, and wrote off a construction charge of $111,000.‡ These items together are over 28c. per thousand on the gas they made during the year. It would seem therefore that the Boston Company could afford to reduce the price to the neighborhood of $1.00 per thousand. The difference between this and the price charged goes into the pockets of the shareholders instead of into the municipal coffers as in Philadelphia.

What the advocates of private ownership must prove is not that private management is more economical than public, so far as the cost price of gas is concerned, although even

*There was an increase of $127,000 in the amount of gas sold to private parties, but a decrease of $44,000 in the amount of gas sold for public lamps.

† Residuals left from the gas making were sold for ⅓ the cost of the coal, etc., used in 1888; and in 1889, they were sold for 36 per cent. of the cost.

‡ *Fifth Annual Report* of Gas and Electric Light Board for Massachusetts p. 122.

this seems not clearly proven. They must shew that the service rendered to the ordinary citizen is as cheap by the one method as the other. When the Philadelphia citizen pays $1.50 for a thousand feet of gas he pays 50c. of it as a tax which makes his other taxes that much less; but when the Boston man pays $1.30 his other taxes are not decreased at all, except perhaps to the extent of the 6c. just mentioned. The result is that the latter really pays for his gas $1.24 where the former pays $1.05. It is idle to claim that the 19c. difference is due to greater cost in Boston, in view of the balances shown by the company. It is equally unsatisfactory to explain it by the greater efficiency of the company's servants, when we observe the results of British experience in gas and American experience in waterworks previously quoted. If the charge of the private company were but a few cents more than that of the municipality, and some system of keeping it at that point could be devised, it would seem more advantageous that the whole matter should be removed from the sphere of local politics. It can never be wholly removed, however, for the charter must be renewed periodically, and the longer the periods that elapse, the more can the company afford to spend in securing the return of its supporters in the particular year when the charter falls in, although a lengthened absence from the political arena must make such an object more difficult to accomplish.

In the French capital, the gas company in 1855 got a charter for 50 years, which fixed the price of gas at a certain point. The improvements in manufacturing soon greatly lowered the cost of production upon which the old price was based; and during the troubles of 1870, the shareholders were obliged to recast the agreement so as to divide with the city all profits above 11,000,000 francs per year. Commercial causes have again cheapened gas, and the company now offers to lower the price of gas by one-sixth, and to accept a lower annual profit, on condition that the concession is renewed to them for forty years, and that they may employ if they choose, electric light. The objection to this plan is that it would involve the retention for forty years of the price now fixed.

A better system is that known as the sliding scale,* by which the percentage profits of the shareholders may increase, but only in proportion as the price is lowered. It thus becomes the interest of the company to supply the gas at the lowest possible rate.

In this simple form it has been adopted by the British Parliament in fixing the charters of many companies; the usual arrangement being that, for each reduction of one penny per thousand feet of gas, the company may increase its dividends one-quarter of one per cent. over a certain stated dividend. By this means the average price of gas in London which was $1.08 per thousand was lowered to 64c. in 1885. Of course the difficulty in carrying out such a scheme lies in the necessity of obtaining accurate statistics from the company, with whom there is always a tendency to over-capitalization. Some advocate municipal arrangement as a refuge from this difficulty; but the Board of Trade returns which are given in Great Britain, seem to possess tolerable accuracy.

In Massachusetts a different method is pursued. The Act of the Legislature, establishing the Board of Gas Commissioners (Acts of 1885, ch. 314, s. 9), provided that "upon the complaint in writing of a mayor of a city in which a gas company is located, or of twenty customers of such company, either of the quality or price of the gas sold and delivered by such company, the board shall notify the company of such complaint, and shall, after notice, give a public hearing to such petitioner and such company, and after said hearing, may order, if they deem just and proper, any reduction in the price of gas or improvement in quality thereof." Their decision is final, unless specially reversed by the State Legislature. These wonderfully wide powers seem to have been exercised with moderation; and while apparently giving general satisfaction, have settled many difficult questions that have arisen since the organization of the commission in 1885.

The commission consists of three members appointed for three years by the State Governor, subject to approval by the Council. The returns required annually from

* A sliding scale of prices dependent on the price of coal was adopted by Congress in its agreement with the Washington gas company; but the company soon reduced its prices to a considerably lower rate than that called for.

each company include the amount of its authorized capital, its indebtedness and financial condition on Jan 1st, and a statement of its income and expenses during the preceding year, together with its dividends, paid or declared, and a list containing the names of all its salaried officers with the annual salary paid to each; the return to be signed and sworn to by the president and treasurer of each company, and a majority of its directors.*

In Ontario, the Revised Statutes (1885, ch. 164), provide that any five or more persons may form a company for supplying gas, water, or both, to any municipality by obtaining the consent of the municipal council. The municipal authorities may take stock in such company, thus securing representation on the Board of Directors, an important provision for the safe-guarding of city interests. The period set as the outside limit of the company's existence is 50 years, and the municipal authorities may at any time acquire the works of any company incorporated after March, 1882, by paying such company the actual value thereof as determined by arbitration, "having regard to what the same would cost if the works should then be constructed, or the property then bought, making due allowance for deterioration, wear and tear, and making all other proper allowances, and shall increase the amount so ascertained by 10 per centum thereof, which increased sum the arbitrators shall award to the company."

Electric Lighting.—There are about 1,350 electric lighting plants in America, of which at least 50 are owned by municipal authorities. In spite, however, of the abundant discussion in recent years as to the relative merits of municipal and private management, the *data* with which we are presented for the purpose of forming an opinion are less satisfactory than in any of the other industries we are now considering. The returns of cost, etc., seldom take account of interest on money invested in the plant, or mention any appropriation for deterioration in value, or for the purposes of a sinking fund; yet to make any useful comparison, these must be estimated. In Chicago, the electric lights were said to cost $73 each, per year, burning every night all the night through. At an Electric Light Convention, the superintendent of the city works was charged with arriving at these results by "neglecting taxes, water rent, interest on investment, insurance, repairs, depreciation or renewal of plant in general, and by charging the wages of the electric light linemen to the fire alarm telegraph department." It was argued that, if these were properly accounted for, the cost would be $190.63 per year per lamp. The superintendent, though present, had too severe a cold to reply. In answer to the writer's application for information, one month later he was "preparing a reply;" but half-a-year afterwards, when another enquiry was made, he "regretted that the mayor had forbidden the heads of departments from giving statistics regarding municipal matters, except what is given in the annual reports." Many other places seemed to have arrived at about the same degree of accuracy.

Where lighting plant can be supplied with power from works already owned by the city, as in Ypsilanti, Michigan, where they are managed in connection with the city water works, evidently they can be run more economically than would be possible in a separate establishment. Judging by the returns of the Massachusetts Gas and Electric Light Commissioners, the business in that State is not exceedingly lucrative. Fourteen companies in the State paid dividends averaging about five per cent., and only twenty-one companies out of sixty paid any dividends at all. There are no municipal plants in Massachusetts,† so that it is not possible to institute a comparison. Indeed the whole electric light business has hitherto been developing so rapidly, with ever-changing conditions, that scarcely any of the estimates of cost in the past are of use for the future. The air is already clearing, however; and it will not be long before more adequate material will be afforded. In the meantime, municipalities should avoid any action that would tie their hands for the future.

* A statement of the form in which the information is required from Gas Companies may be found at the close of the Annual Report of Jan. 1887, and from Electric Light Companies in the report of 1889.

† An Act to permit cities and towns to provide their gas or electric light has repeatedly been brought before the State Legislature, and will probably pass sooner or later. It provides that if two-thirds of the city Council for two succeeding years, the mayor for two years, and a public meeting of citizens favor such action, that bonds may be issued for not more than 20 years, and to the extent of not more than 5 per cent. of the ratable property of the town.

In Great Britain, the Electric Lighting Act of 1882, (45 & 46 Vict. c. 56), provides that the Board of Trade may license local authorities or private companies, with the consent of the local authorities, (and without it, if unreasonable opposition is offered), to provide electric light, but it cannot confer an exclusive right, as the district may be again granted to another. The undertakers of the enterprise must annually publish such returns as the Board of Trade calls for. Sec. 27 provides that the local authorities may require a private company to sell the plant, etc., at its market value, "but without any addition in respect of compulsory purchase, or of good will, or of any profits which may or might have been or be made from the undertaking." Such requisition to sell can be enforced only at the end of forty-two years from the granting of the company's charter, and at the end of every subsequent period of ten years,* unless shorter periods are specified in the charter. The value is determined by arbitration. Secs. 13 and 14 give local authorities a veto on the stringing of wires, breaking up of streets, etc., subject to an appeal to the Board of Trade. Private initiative has had the field almost to itself during the two years since the recent amendments, and it is significant that during 1890 not one municipal plant was started. †

Street Cars.—In Great Britain, out of 31 municipalities which own their street cars—with a quarter of the total mileage in the kingdom—23 administer their own property. Where the road has been leased to a company, the city in granting its charter has usually paid more attention to the obtaining of an effective service than to great financial gain. In Glasgow, the city built the road in 1872, and leased it for twenty-two years to a company on condition of paying interest on the city's investment, establishing a sinking fund sufficient to pay the expense of building by 1894, and the payment of 4 per cent. of income to keep tracks in repair, together with a rent of £750 per mile of street in the centre of the city. For new lines in the more sparsely settled outskirts, much less is paid. Since 1880 the company has done well. The charges were to be not more than one penny per mile, and some runs of much more than a mile used by labouring men and artizans were also to be a penny. Morning and evening cars for workmen run for about one cent per mile.‡

In Birmingham, "the city builds the street railways in order to keep control of its streets."§ In Liverpool, the company leasing the track pays about 10 per cent. of its cost as a rental. In all these cities the tracks are laid and kept in repair *by the corporation*, and of all may justly be said as the city engineer of Liverpool reports of his city. "The tramways do not form the slightest impediment to traffic, even to the narrowest wheeled vehicles." The difference between their cities and ours in this respect is very striking, and the attention of American municipal and street railway authorities is respectfully directed for the millionth time to the subject.

In America, there are no street railways operated by local authorities. In Toronto, in 1861, a franchise was granted to a company for thirty years, at the end of which time the city could assume the property on payment of its value to be determined by arbitration. The city decided to take over the road in 1890; but while the future action of the city has not been definitely settled, the franchise will probably be again leased for a percentage of the *gross* receipts. This is the best form of lease; and is becoming more and more general in its adoption by American cities. In 1884 the New York Legislature passed an Act *permitting* such compensation if the franchise was sold by auction. In the city of New York the aldermen knew how to dispose of the Broadway franchise in a better way, and the result was that the city got nothing. This led to the passage of a State Act (Laws of 1886, Cap. 65 ||) making it *compulsory* that the sale of any street railway franchise should be "at public auction to the bidder who will

*In the Act of 1882, the period of taking over was at the end of 21 years, and every subsequent 7 years. This seems to have been considered too short, and by an Act of 1888, the periods were changed to those given in the text.

† *Journal of Gas Lighting*, Dec. 30th, 1890.

‡ *Glasgow, a Municipal Study;* Albert Shaw, in *The Century Magazine*, March, 1890.

§ Julian Ralph, in *Harper's*, June, 1890.

|| With amending Acts of 1886, ch. 642, and of 1889, ch. 564.

agree to give the largest percentage per annum of the gross receipts," and "the said bidder, who may build and operate the road, shall keep accurate books of account of its earnings, which books shall at all times be subject to the inspection of the local authorities." Under these provisions,* franchises have been sold for as high as 27 per cent. of the gross receipts. This plan, by which receipts from the road are spread over the years during which the franchise runs, seems preferable to the mode adopted in New Orleans where a lump sum was accepted.† The great difficulty with the "percentage of gross returns system," is, of course, the unwillingness of a company to extend their line into suburban districts where an extension is necessary, but will not pay very well, or perhaps at all. As has been previously shown it is difficult and unwise to introduce a new company; and the city authorities are thus at the mercy of the company in possession, which may, by its refusal to accept reasonable profits, paralyze the city's growth. What can the city do but make any terms the company requires? This would be as unfair as to give the city power to compel the company to extend its lines. On the other hand, if the street railway shareholders own property in a suburb which they are desirous to "boom," they may attract inhabitants by special rates. When they have sold out their properties they may withdraw the service, to the ruin of the citizens who have removed there. It has been well observed that the fact that this has not occurred more frequently is an encouraging example of commercial probity. Some sort of government commission is evidently necessary to regulate such matters, as well as to exercise a general supervision over this rapidly developing industry. It may be that the difficulties arising from the determining of earnings, the inspection of books, the employment of labour, or the reduction of fares, etc., may lead to an assumption by municipalities of this industry as the easiest way out of the difficulty.‡

Section IV.—Some Conclusions.

The financial results of such comparison as we have been able to institute seem then to indicate:—

1. That water supply is an undertaking in which municipal management has been eminently successful, both in America and in Europe, and in both has yielded large financial returns, which have been used to lighten the burden of general taxation; but that there should, if possible, be a lowering of rate required from the more needy, by, if necessary, a higher charge for such additional services as are practically luxuries.

2. That while the municipal direction of street railways has been attempted but seldom in Europe and never in America, street car service is a source whence large revenues might be derived by great and growing cities, revenues which may be obtained either through the power of control rendered necessary by their public character, or by their direct operation on the part of the city. This latter course may be rendered necessary by the difficulties in the way of the former; but in any event street railways should not be operated with a view to a very large surplus as this would involve a special tax on a class not the most able to support it.

3. That the gas industry, where undertaken by the municipal authorities, has been as successful as when in private hands, and has, in addition, provided large sums for the local treasury. The tax on consumers is perhaps not more inequitably distributed than is ordinary taxation, but an attempt should be made to furnish a certain amount of the service cheap enough to be within the reach of all.

---

* Additional provisions exist prohibiting the sale of a street railway franchise in a city of more than 250,000 for a less yearly payment into the treasury than 3 per cent. of the gross receipts for the first five years after the commencement of operation, and 5 per cent. thereafter.

† The company maintaining the entire paving of the streets traversed by its lines, however.

‡ The rapid increase in street railway profits is illustrated by the following figures for the State of New York: Net income 1889, 5.89 per cent., 1890, 6.24 per cent. on capital stock; dividends in 1889, 4.41 per cent., 1890, 4.67 per cent.; surplus, 1889 $518,000, in 1890, $596,000; net earnings per passenger, 1.18 cents in 1889, in 1890, 1.27 cents; net earnings per mile of road, 1889 $7,319, in 1890, $8,013. *Report of Railroad Commissioners*, Vol. II, p. 70. 1890.

4. That electric lighting is still in too unsettled a stage for us to be able to draw definite conclusions regarding it. There are indications that under ordinary conditions it will pay a town better to lease the franchise, but where the industry can readily be joined to one already in the possession of the municipality it can often be managed more economically than by private enterprise.

5. That of telephone service so little is yet known that though its peculiarities call for more than the ordinary amount of public control, it would be unwise to attempt municipal management.

The above are but general conclusions, and would, in their application to any particular place, be modified by disturbing local conditions which may be so different from those that are usual as utterly to destroy their validity. No absolute rule can be laid down, and what has been said is said only in the hope of making the determination of these problems more easy. That even general results may be helpful cannot be doubted, and the writer regrets that these cannot be rendered more accurate owing to the paucity of reliable statistics. This lack of statistics is the result of the newness of the conditions involved, and must continue till there is fuller recognition of the importance of these industries. They have passed the bounds at which private attempts at collecting information can be at all effectual. Detailed governmental returns are absolutely necessary.*

BIBLIOGRAPHY.

A.—Reports, etc.

Brantford, Ont.—Waterworks By-laws.
Boston, Mass.—Waterworks Report, 1889.
" —Report of the Special Committee on the Use of Streets, 189 .
" —Inaugural address of Mayor Matthews, 1891.
Chatham, Ont.—Waterworks By-laws.
Detroit, Mich.—Annual Reports, Financial, etc.
Dundas, Ont.—Waterworks By-laws.
Hamilton Ont.—Street Railway By-laws.
" —Waterworks Report, 1889.
Kingston, Ont.—Waterworks By-laws.
London, Eng.—Report of the County Purposes Committee (water supply), 1890.
" —Review of the First Year's work of the County Council (by the Chairman), 1890.
Massachusetts.—First six Reports of the Gas and Electric Light Commissioners, Boston, 1886-1891.
Montreal, Que.—Annual Reports, Financial, etc., 1888.
" —Street Railway By-laws.
" —Waterworks Reports, 1889.
New Haven, Conn.—Inaugural address of Mayor Sargent, Jan. 1st, 1891.
New Orleans, La.—Comptroller's Reports, 1888, 1889.
" —Street Railway Charters.
New York State Railroad Commission, First and Eighth Annual Reports. Albany, 1884-1891.
Ontario Commission on Municipal Institutions, Reports of, 1888, 1889.
Philadelphia.—Annual Financial Report, for 1889.
Reports from Consuls of the United States, June, 1890.

*The writer wishes to acknowledge the courtesy and ready response he has met with in his search for information, and particularly to thank the following gentlemen for the trouble they have taken:—W. S. Allen, clerk of Board of Gas and Electric Lighting Commissioners, Mass.; M. J. Francisco, president Electric Light Co., Rutland, Vt.; W. Hamilton, superintendent Toronto Water Works; R. J. McGowan, secretary Fire Department, Toronto; and C. E. Stump, vice-president Street Railway Pub. Co., New York; and also to acknowledge his debt to Professor Ashley for hints received during the preparation of the essay and care bestowed upon the correction of the proof.

A.—Reports, etc.—*Continued.*

Toronto.—Street Railway Charter, Statutes and Agreements, 1861-1889.
" —Street Railway Arbitration.
" —Street Railways, Report of Deputation to American Cities, 1890.
" —Treasurer's Reports, 1888, 1889.
" —Waterworks Reports, 1878—1889.
Ypsilanti, Mich.—Council Proceedings and Report of Water Commissioners, 1890.

B.—Periodicals, Magazines and Trade Journals.

American Gas Light Journal, New York.
Economist, London, Eng.
Electrical World, New York.
Electrician, London, Eng.
Engineering Record, New York.
Journal of Gas Lighting, Water Supply, etc., London, Eng.
Journal of the English Board of Trade, London, Eng.
Monetary Times, Toronto, Ont.
Street Railway Journal, New York.

C.—Pamphlets and Monographs.

Fabian Tracts. Facts for Londoners. 1889.
Foote, A. R. Municipal ownership of Industries. Washington, 1891.
Francisco, M. J. Municipal Lighting. Rutland, Vt., 1890.
Godkin, M. Municipal Government of New York. North Am. Review, Oct. 1890.
Low, Hon. Seth, The Problem of City Government. [Notes supplementary to Johns Hopkins Studies, No. 4]. Baltimore, 1889.
Marshall, Prof. Alfred. Some Aspects of Competition. London, 1890.
Ralph, Julian. Birmingham, the Best Governed City in the World. Harpers', June, 1890.
Shaw, Albert. Glasgow, a Municipal Study. Century Magazine, March, 1890.
" London. Century Magazine, Nov., 1890.
Whipple, F. H. Municipal Lighting. Detroit, 1888.

D.—Books.

Adams, H. C. Relation of the State to Industrial Action. Publications of Am. Econ. Assoc., vol. I. Baltimore, 1887.
" Public Debts, (Part III, Chapters 3 and 4). New York, 1887.
Baker, M. N. Manual of American Waterworks. New York, 1889-90.
Baker, C. W. Monopolies and the People (Chapter 5). New York, 1889.
Bryce, J. The American Commonwealth (Chapters 50, 51, 52, 88, 89). London, 1889.
Ely, R. T. Taxation in American Cities. New York, 1888.
" Questions of To-day. New York, 1888.
Farrer, Sir T. H. The State in its Relation to Trade (Chapter 10). London, 1883.
Howells, W. D. A Hazard of New Fortunes. A novel. (Part V, Chapters 3 and 5, a picture of New York during a street car strike). New York, 1890.
James, E. J. The Relation of the Modern Municipality to the Gas Supply. Publications of Am. Econ. Assoc., Vol. I. Baltimore, 1886.
Leroy-Beaulieu, Paul. Traité de la Science des Finances (4th ed., Vol. 1., pp. 108-110, 751-2). Paris, 1888.
Mill, J. S. Political Economy (Book V, Chapter 11, Section 11).
Roscher, W. System der Finanzwissenschaft (§ 158, pp. 662-665). 2nd ed. Stuttgart, 1886.
Toynbee, Arnold. The Industrial Revolution (pp. 1-27, 72 -125). London, 1887.
Wagner, A. Volkswirthschaftslehre, Erster Theil, Grundlegung (2nd ed., §§ 146, 152, 171, 177). Leipzig, 1879.
" Finanzwissenschaft, Erster Theil (3rd ed., §§ 201, 267). Leipzig, 1883.
" " Zweiter Theil (1st ed., § 307). Leipzig, 1880.

MAR 17 1892
MAR 29 1892
DEC 2 1895
OCT 9 1901
OCT 13 1906
JAN 8 1897
APR 30 1897
JUN 14 1894

Gov 3158.91
Municipal monopolies and their mana
Widener Library 005122914
3 2044 080 051 824